2021

NATIONAL EMERGENCY MEDICAL SERVICES

EDUCATION STANDARDS

NHTSA
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

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Executive Summary

In 2009, the EMS community came together to create the original *National EMS Education Standards (*the *Standards)*. This represented a major step toward realizing the vision put forth in the 1996 *EMS Agenda for the Future* and was further outlined in the *EMS Education Agenda for the Future: A Systems Approach* four years later. This new version of the *Standards* builds on the foundation created by those landmark documents and other achievements of the last quarter-century, including *EMS Agenda 2050* and the *National Scope of Practice Model*.

The *National EMS Education Standards* outline the minimal competencies for entry-level EMS clinicians to perform their roles as outlined in the 2019 and 2021* updated *National EMS Scope of Practice Model*. The *Standards*, while a national effort, were intentionally created in a way that allows for diverse implementation methods to meet local needs and evolving educational practices. This less prescriptive format of the *Standards* allows for ongoing revision of EMS educational content consistent with scientific evidence, educational practices, and community standards of care.

Noteworthy revisions found in the 2021 edition of the *Standards* are based upon input and considerations obtained from numerous sources. These include stakeholder and public comments, national guidance documents (the original 2009 *National EMS Education Standards, EMS Agenda 2050,* and the 2019 and 2021* updated *National Scope of Practice Model*), the National Registry of EMT's practice analysis, technological advances, known and evolving best practices, and evidence-based medicine.

* As a result of the 2020-21 public health emergency, several changes were made under the urgent update process to the 2019 National EMS Scope of Practice Model which are reflected in these education standards.

The following areas within the *Standards* had notable revisions: public health; pediatrics; geriatrics, behavioral/psychiatric; cultural humility; EMS operations; pharmacology; and EMS safety, wellness and resilience. Input was provided and every suggestion or recommendation was considered. Revision and adjustments were based on a team discussion, with expert consultation when needed.

When applying the *Standards* to individual programs and classes, EMS educators have the freedom to develop their own curricula or use any of the wide variety of lesson plans and instructional resources that are available. This ensures that each program can specifically address individual and community needs.

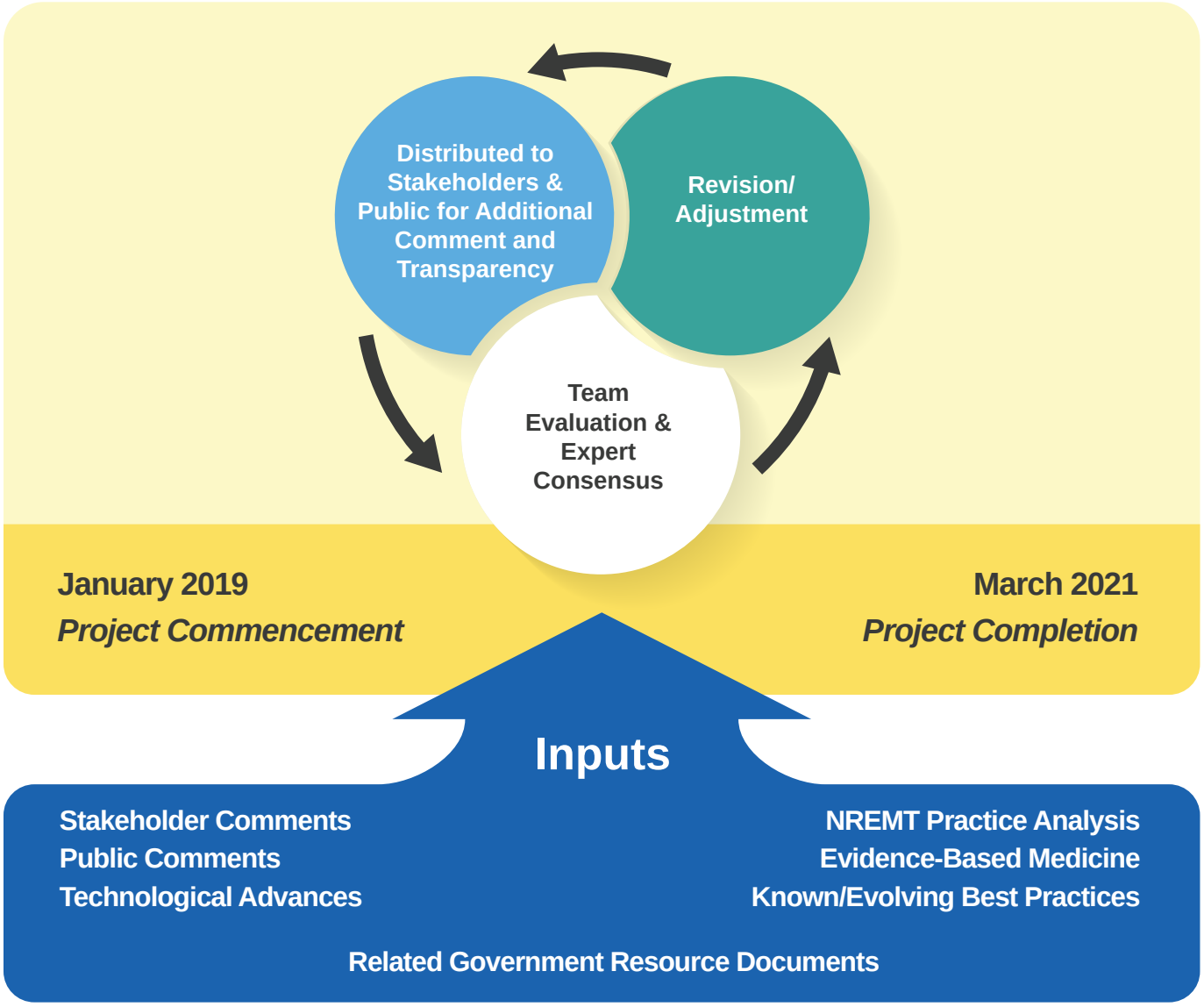
The *Standards* are not intended to stand as a comprehensive document guiding the entire development of EMS clinicians, but rather one part of a comprehensive system. EMS education programs will incorporate each element of the education system proposed in the *Education Agenda*.

These elements include:

- National EMS Core Content
- National EMS Scope of Practice Model
- National EMS Education Standards
- National EMS Certification
- National EMS Program Accreditation

This integrated system approach to EMS education is essential to achieving the goal of developing EMS clinicians across the country who are competent in the appropriate knowledge, skills, and abilities for their licensure level.

Revision Process



Introduction and the Evolution of EMS in the United States

EMS has evolved and grown significantly since the first organized, national effort to develop EMS systems began in the 1960s. Compared to colleagues in health care and public safety, EMS remains a young profession and continues to advance as we further define and enhance our structure, oversight and organization.

As EMS system operations have developed, so has EMS education. In the early 1970s, registered nurses and physicians taught most EMS programs. Few student and instructor resources related directly to prehospital emergency care. No standards existed to define what EMS clinicians should know and what they should be able to do. By the early 2000s, most of this original framework was being replaced, and national education standards and a scope of practice were defined for the first time. Today, the profession has become more sophisticated, and community expectations have increased. With health care, technology and science evolving faster than ever, it is also important to revisit these topics and update these guidelines more frequently.

EMS Agenda for the Future

In August 1996, the *EMS Agenda for the Future* (the *Agenda*) was published. Developed with funding from the National Highway Traffic Safety Administration and the Health Resources and Services Administration, and led by the National Association of EMS Physicians and the National Association of State EMS Directors, the *Agenda* brought together stakeholders from throughout EMS to create a unifying vision for emergency medical services in the United States.

The *Agenda* was designed to guide government and private organizations in EMS planning, development, and policymaking at the national, state and local levels. It addressed 14 attributes of EMS, including the EMS education system, and defined a vision for EMS education "based on research" and "conducted by qualified instructors" while employing "sound educational principles."

EMS Education Conference

Soon after publication of the *Agenda,* representatives of 30 EMS-related organizations met at an EMS Education Conference sponsored by NHTSA to identify the necessary steps for implementing that vision.

The EMS Education Conference resulted in several recommendations, including:

- *The National EMS Education and Practice Blueprint* (the *Blueprint*) is a valuable component of the EMS education system. A multidisciplinary panel, led by NHTSA, to identify core educational content more explicitly for each licensure level, should revise it.
- National EMS Education Standards are necessary but need not include specific declarative material or lesson plans. NHTSA should support and facilitate the development of national EMS Education Standards.
- The *Blueprint* and national EMS Education Standards should be revised periodically, with major revisions occurring every 5 to 7 years, and minor updates made every 2 to 3 years.

EMS Education Agenda for the Future

In 1998, NHTSA convened a group of educators who developed a document titled *EMS Education Agenda for the Future: A Systems Approach* (the *Education Agenda*). The EMS education system envisioned in the *EMS Agenda for the Future* was further defined and articulated in the *Education Agenda* (see Figure 1). The *Education Agenda*'s authors also stated that, to be most effective, each component in the EMS education system should be structured, coordinated and interdependent.

National EMS Core Content

The *National EMS Core Content* was published in 2005. Core Content defines the entire domain of out-of-hospital practice and identifies the universal body of knowledge and skills for EMS clinicians who do not function as independent practitioners.

Funded by NHTSA and HRSA, this project was led by the National Association of EMS Physicians and the American College of Emergency Physicians.

EMS Education Agenda for the Future: A Systems Approach

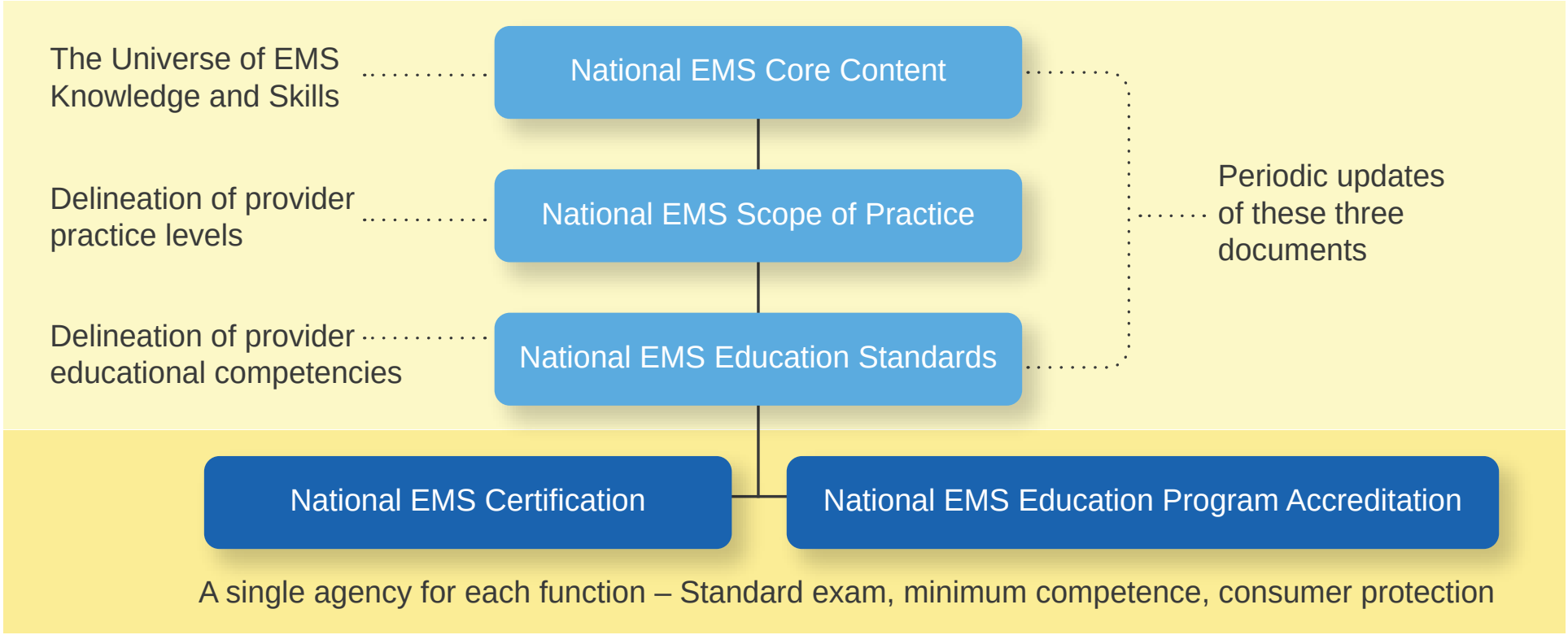


Figure 1: Model EMS System

National EMS Scope of Practice

The *National EMS Scope of Practice Model* (the *Scope of Practice*) is a consensus document that was published in 2007 and revised in 2019. This document defines four levels of EMS licensure—emergency medical responder (EMR), emergency medical technician (EMT), advanced emergency medical technician (AEMT) and paramedic—and delineates the practices and minimum competencies for each level. The *Scope of Practice* does not have regulatory authority but provides guidance to states. Adherence to the *Scope of Practice* would increase uniformity in EMS practice throughout the U.S. and facilitate reciprocity between states. Leadership for this project was delegated to the National Association of State EMS Officials and funded by NHTSA and HRSA.

The *Scope of Practice* further defines practice, suggests minimum educational preparation, and designates appropriate psychomotor skills at each level of licensure. Further, the document describes each level of licensure as distinct and distinguished by unique "skills, practice environment, knowledge, qualifications, services provided, risk, level of supervisory responsibility, and amount of autonomy and judgment/critical thinking/decision-making."

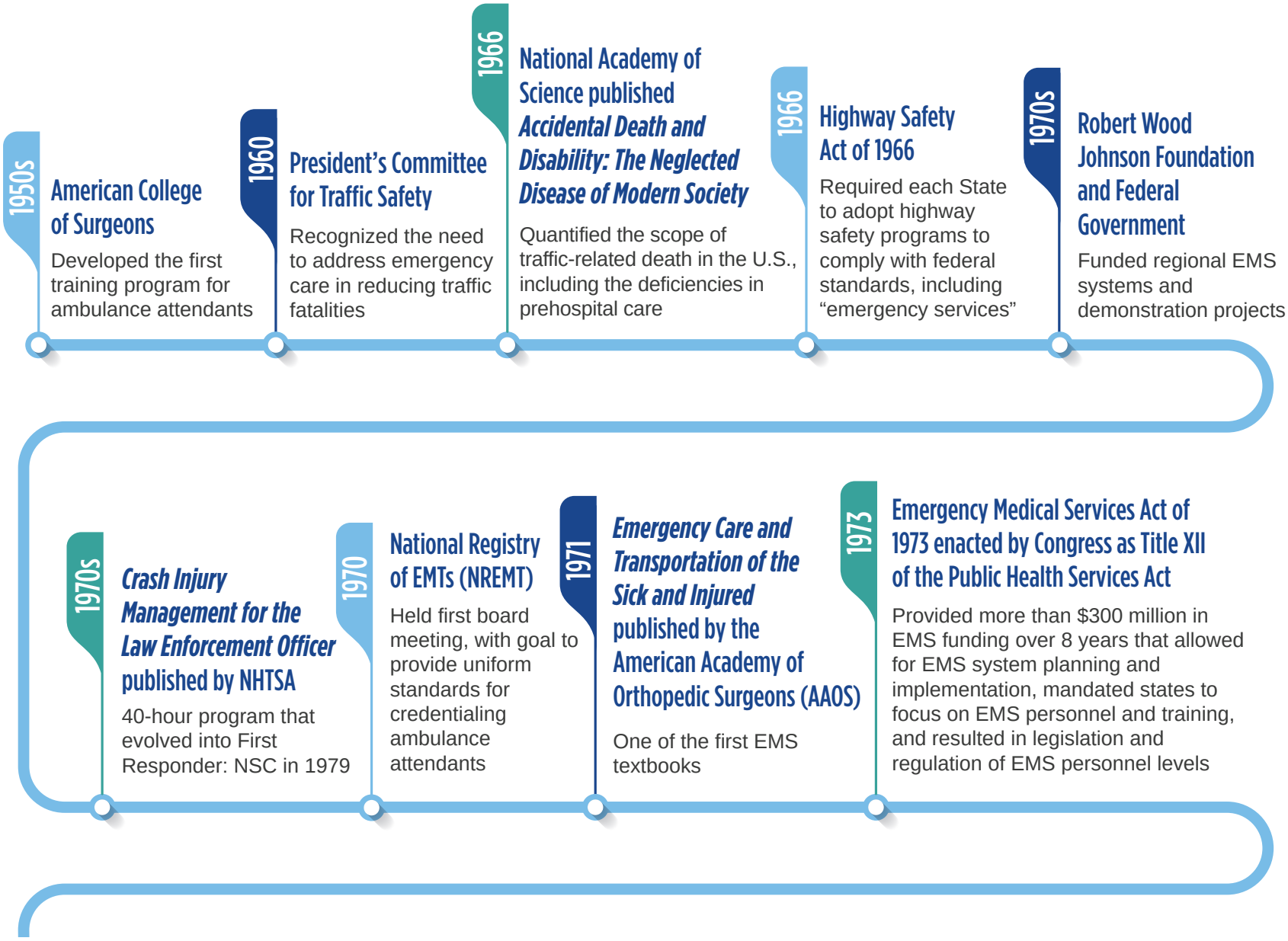
National EMS Education Standards

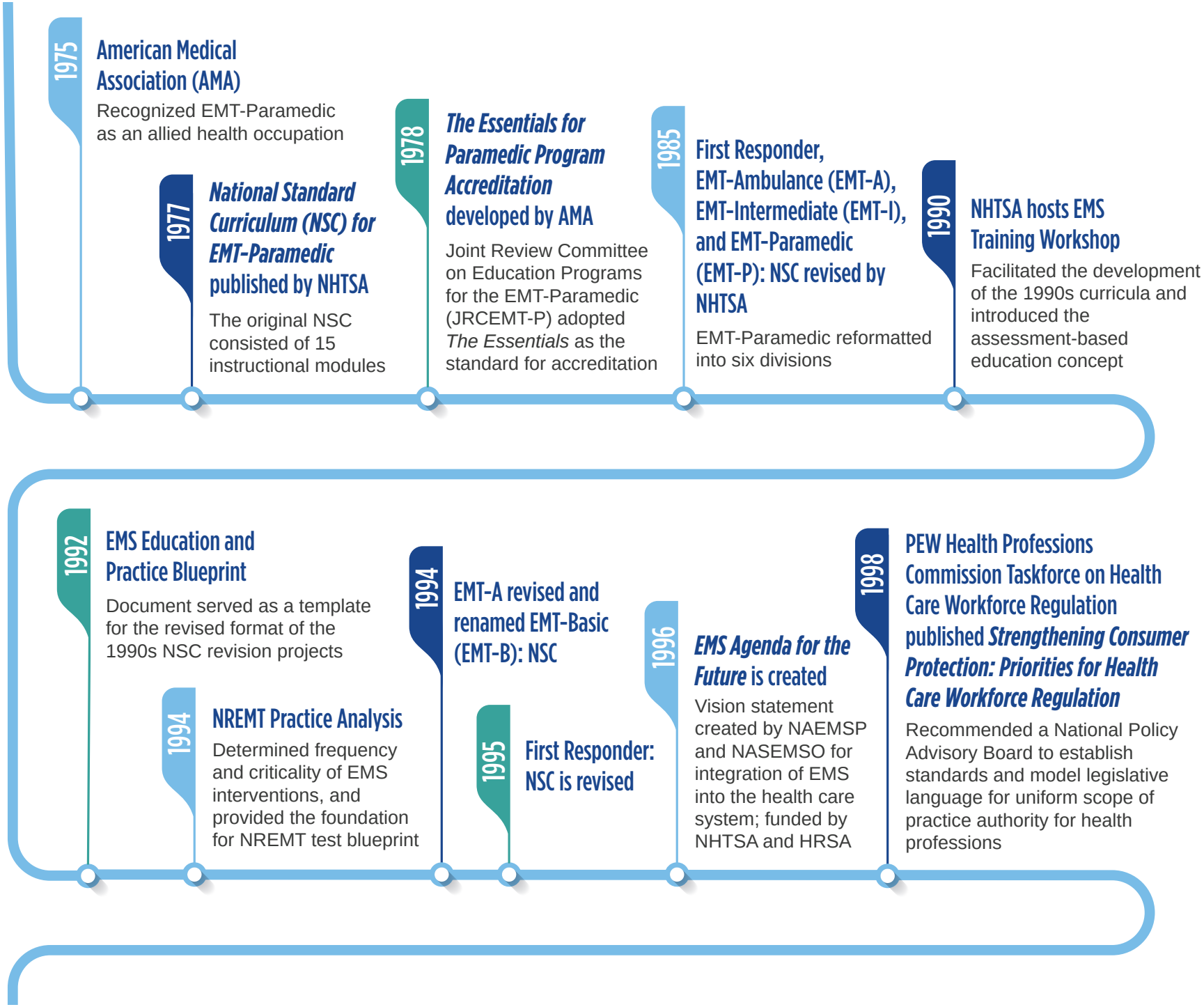
The *National EMS Education Standards* replaced the NHTSA National Standard Curricula at all licensure levels when first published in 2009. The *Standards* define the competencies, clinical behaviors, and judgments that should be met by entry-level EMS clinicians to meet practice guidelines defined in the *Scope of Practice*. Content and concepts defined in the *National EMS Core Content* are also integrated within the *Standards*. Leadership for this project was delegated to the RedFlash Group and National Association of EMS Educators, and funded by NHTSA and HRSA. With input from a large number of stakeholders, the team chose not to update the separate Instructional Guidelines for each clinician level originally published as companion documents to the 2009 Standards. Instead, the Instructional Guidelines have been incorporated within the *Standards*, replacing the need for those supplemental materials.

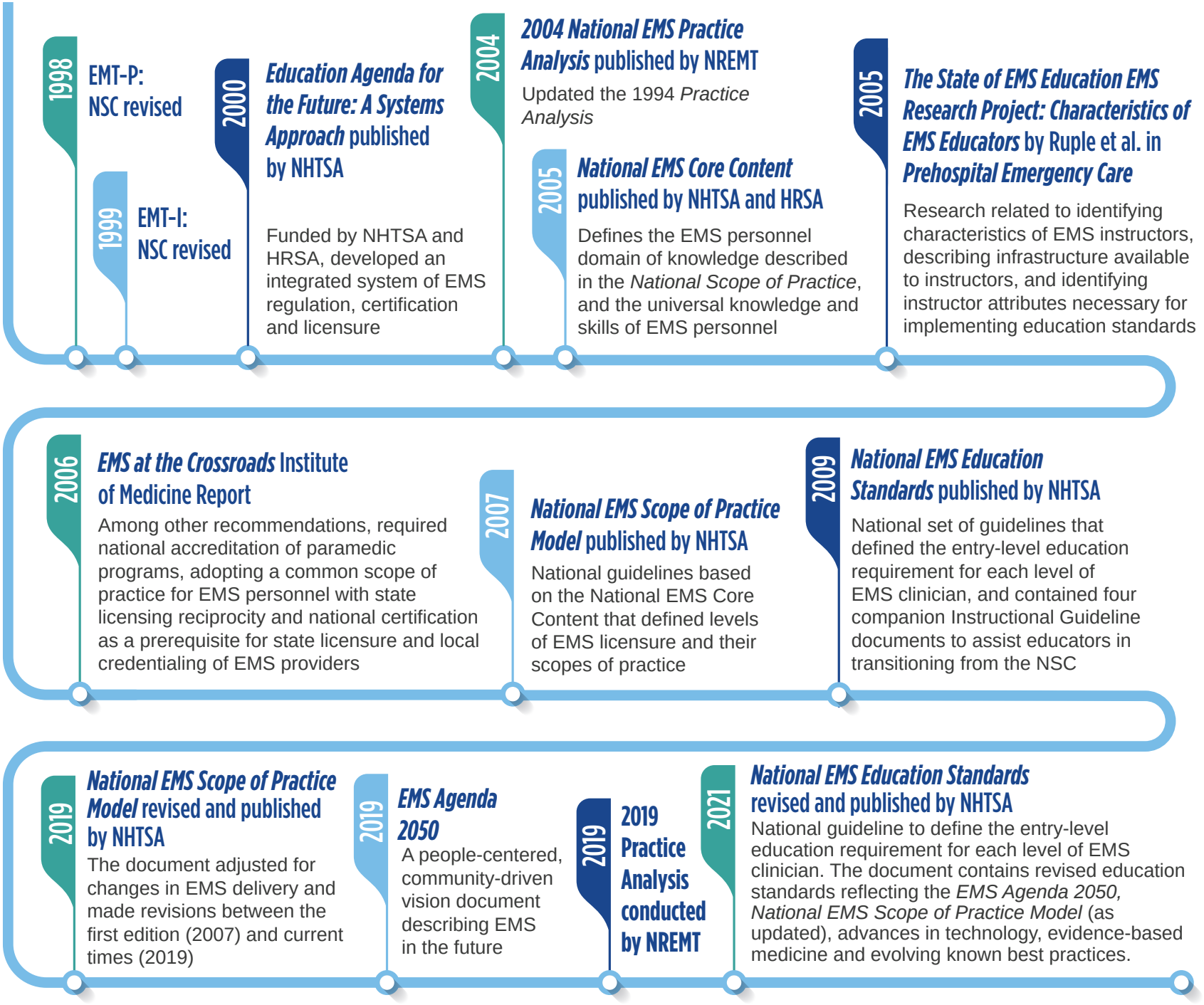
National EMS certification and national EMS education program accreditation are the "bookends" that support the other key elements of the system. The *Education Agenda* recommended an individual should graduate from a nationally accredited EMS education program to be eligible for National EMS Certification. Essential components of the *EMS Agenda* include a single National EMS Accreditation Agency and a single National EMS Certification Agency to ensure consistency and quality of EMS personnel.

A Brief History of EMS Education in the United States

This timeline outlines key events in the development of EMS education in the United States from the 1950s to the present.




1975
American Medical Association (AMA)
Recognized EMT-Paramedic as an allied health occupation
1977
National Standard Curriculum (NSC) for EMT-Paramedic published by NHTSA
The original NSC consisted of 15 instructional modules
1978
The Essentials for Paramedic Program Accreditation developed by AMA
Joint Review Committee on Education Programs for the EMT-Paramedic (JRCEMT-P) adopted The Essentials as the standard for accreditation
1985
First Responder, EMT-Ambulance (EMT-A), EMT-Intermediate (EMT-I), and EMT-Paramedic (EMT-P): NSC revised by NHTSA
EMT-Paramedic reformatted into six divisions
1990
NHTSA hosts EMS Training Workshop
Facilitated the development of the 1990s curricula and introduced the assessment-based education concept
1992
EMS Education and Practice Blueprint
Document served as a template for the revised format of the 1990s NSC revision projects
1994
NREMT Practice Analysis
Determined frequency and criticality of EMS interventions, and provided the foundation for NREMT test blueprint
1994
EMT-A revised and renamed EMT-Basic (EMT-B): NSC
1995
First Responder: NSC is revised
1996
EMS Agenda for the Future is created
Vision statement created by NAEMSP and NASEMSO for integration of EMS into the health care system; funded by NHTSA and HRSA
1998
PEW Health Professions Commission Taskforce on Health Care Workforce Regulation published Strengthening Consumer Protection: Priorities for Health Care Workforce Regulation
Recommended a National Policy Advisory Board to establish standards and model legislative language for uniform scope of practice authority for health professions


1998
EMT-P: NSC revised
1999
EMT-I: NSC revised
2000
Education Agenda for the Future: A Systems Approach published by NHTSA
Funded by NHTSA and HRSA, developed an integrated system of EMS regulation, certification and licensure
2004
2004 National EMS Practice Analysis published by NREMT
Updated the 1994 Practice Analysis
2005
National EMS Core Content published by NHTSA and HRSA
Defines the EMS personnel domain of knowledge described in the National Scope of Practice, and the universal knowledge and skills of EMS personnel
2005
The State of EMS Education EMS Research Project: Characteristics of EMS Educators by Ruple et al. in Prehospital Emergency Care
Research related to identifying characteristics of EMS instructors, describing infrastructure available to instructors, and identifying instructor attributes necessary for implementing education standards
2006
EMS at the Crossroads Institute of Medicine Report
Among other recommendations, required national accreditation of paramedic programs, adopting a common scope of practice for EMS personnel with state licensing reciprocity and national certification as a prerequisite for state licensure and local credentialing of EMS providers
2007
National EMS Scope of Practice Model published by NHTSA
National guidelines based on the National EMS Core Content that defined levels of EMS licensure and their scopes of practice
2009
National EMS Education Standards published by NHTSA
National set of guidelines that defined the entry-level education requirement for each level of EMS clinician, and contained four companion Instructional Guideline documents to assist educators in transitioning from the NSC
2019
National EMS Scope of Practice Model revised and published by NHTSA
The document adjusted for changes in EMS delivery and made revisions between the first edition (2007) and current times (2019)
2019
EMS Agenda 2050
A people-centered, community-driven vision document describing EMS in the future
2019
2019 Practice Analysis conducted by NREMT
2021
National EMS Education Standards revised and published by NHTSA
National guideline to define the entry-level education requirement for each level of EMS clinician. The document contains revised education standards reflecting the EMS Agenda 2050, National EMS Scope of Practice Model (as updated), advances in technology, evidence-based medicine and evolving known best practices.

The National EMS Education Standards

Each statement in the *Standards* presumes that the expected knowledge and behaviors are within the scope of practice for that EMS licensure level, as defined by the *National EMS Scope of Practice Model.* Each competency applies to patients of all ages.

The *Standards* also assume there is a progression in practice from the emergency medical responder level to the paramedic level. That is, licensed personnel at each level are responsible for all knowledge, judgments, and behaviors at their level and at all levels preceding their level. For example, a paramedic is responsible for the knowledge and tasks described for the paramedic as well as the other three levels of licensure.

The National EMS Education Standards is comprised of four components (Table 1):

1. **Competency** (yellow) – This statement represents the minimum competency required for entry-level clinicians at each licensure level.
2. **Knowledge** (blue) – This represents an elaboration of the knowledge within each competency (when appropriate) that entry-level clinicians would need to master to achieve competency.
3. **Clinical Behaviors/Judgments** (green) – This section describes the clinical behaviors and judgments essential for entry-level EMS clinicians at each licensure level.
4. **Educational Infrastructure** (gray) – This section describes the support standards necessary for conducting EMS training programs at each licensure level.

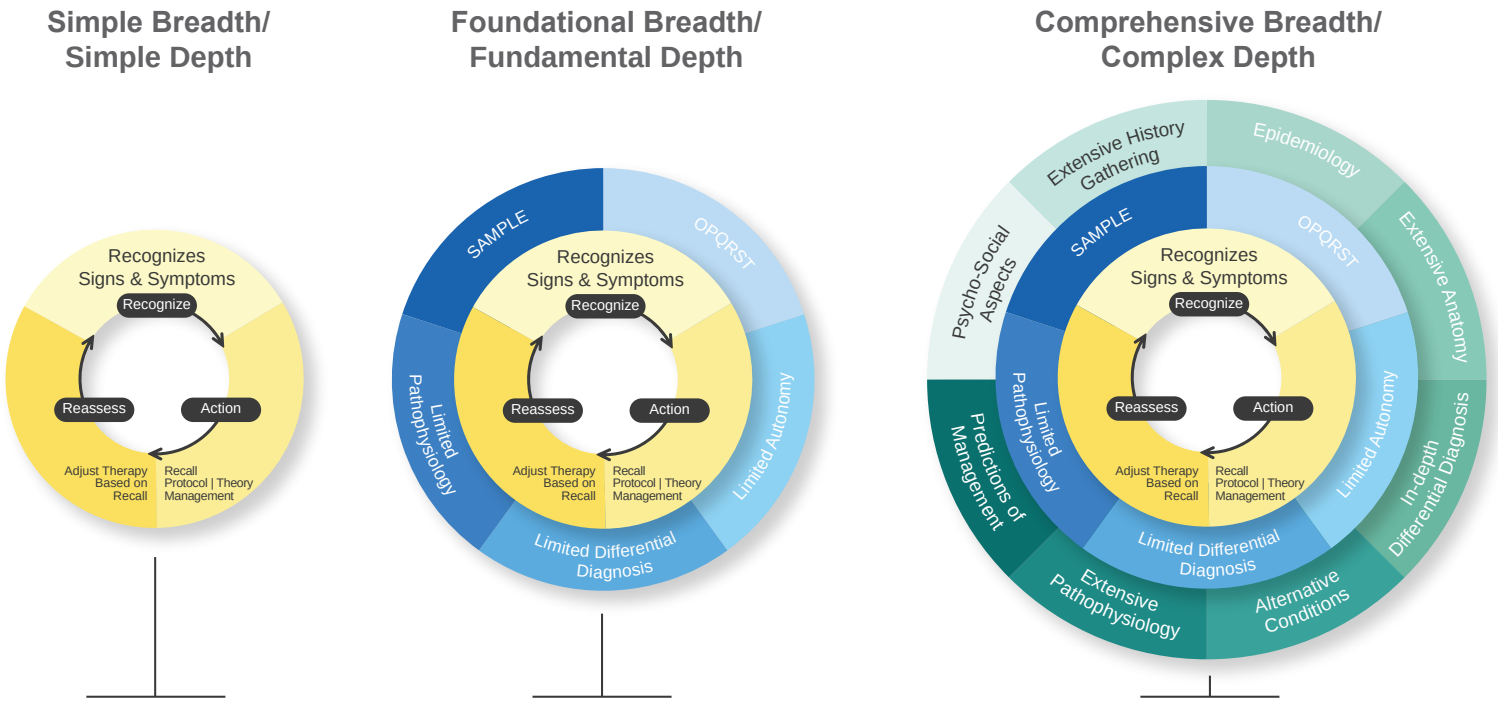
Table 1: Format of National EMS Education Standards

	EMR	EMT	AEMT	Paramedic
Content Area	Competency	Competency	Competency	Competency
Elaboration of Knowledge	Additional knowledge related to the competency	Additional knowledge related to the competency	Additional knowledge related to the competency	Additional knowledge related to the competency
	Clinical behaviors and judgments	Clinical behaviors and judgments	Clinical behaviors and judgments	Clinical behaviors and judgments
	Educational Infrastructure	Educational Infrastructure	Educational Infrastructure	Educational Infrastructure

The descriptors used to illustrate the increasing complexity of knowledge and behaviors through the progression of licensure levels originate, in part, from the *National EMS Scope of Practice Model*. These terms reflect the differences in the breadth, depth and actions required at each licensure level (Figures 2 and 2.1).

The *depth* of knowledge is the amount of detail a student needs to know about a particular topic. The *breadth* of knowledge refers to the number of topics or issues a student needs to learn in a particular competency. For example, EMS instructors need to ensure the emergency medical responder has a thorough understanding of how to use the bag valve mask (BVM) safely and effectively. The amount of detail the instructor provides about how to use that BVM represents the depth of knowledge. Some instructors might adjust their specific curriculum to provide slightly more information about the BVM compared to other instructors, but every graduating EMR will know how to use the device.

Figure 2: Depth/Breadth Terminology



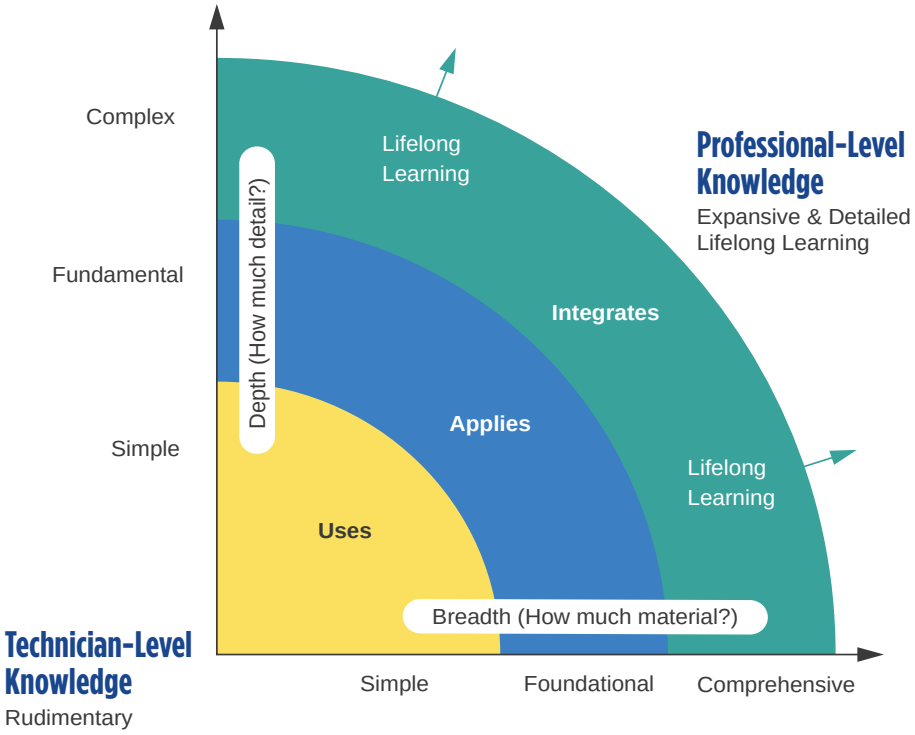
- Minimal Knowledge
- Minimal Range of Skills or Tasks

- Elemental Knowledge
- Increased Range of Skills or Tasks

- Deep Level of Knowledge
- Wide-Ranging, Broad and Extensive Skills or Tasks
- Lifelong Learning

Because of the limited scope of practice for the EMR (fewer tools in the airway box), the instructor may supplement BVM education with a few additional concepts (breadth) surrounding management of a patient's airway, such as airway anatomy and assessment. Supplementing the education with additional concepts adds to the breadth of the material, with each concept having its own level of detail (depth) limited only by the amount of the time the instructor has to teach the material. As more airway management tools are added to the toolbox for each licensure level (EMT, AEMT, paramedic), the level of detail will also change, and curriculum length will need to reflect this increased depth.

Figure 2.1: Depth/Breadth Terminology



To describe the intended depth of knowledge of a particular concept within a provider level, the revision team uses the terms *simple, fundamental* and *complex*. These terms can seem ambiguous and confusing when used in isolation (e.g., learning to correctly use a BVM is not a "simple" task). Instead, the meaning of each term is relative to the other terms. For example, knowledge that is categorized as "simple" is only simple relative to another curriculum that provides more detail, such as when comparing EMT to AEMT. EMT students may need a greater level of airway anatomy detail because the scope of practice is different. Scope of practice is even more different for the AEMT and paramedic student, who will need increasingly greater levels of airway anatomy detail (complex). Course directors, instructors, medical directors and local stakeholders can decide the precise level of detail based on community and student needs rather than establishing a single prescriptive curriculum for the entire nation.

Similarly, the intended breadth of knowledge surrounding a concept is reflected in the terms *simple, foundational* and *comprehensive*. As curricula include an increasing level of detail about the use of the BVM, airway assessment and airway anatomy, the increasing size of the toolbox reflected by the increased scope of practice necessitates a broader list of related subjects. For example, the addition of CPAP, nasopharyngeal airway and oxygen delivery devices at the EMT level broadens the curriculum for the EMT instructor. For instructors teaching paramedic students, the increased scope of practice broadens the knowledge base even more. Clearly, the use of CPAP requires the EMT to have an increased depth and more complex breadth of knowledge than the EMR, but not nearly as much as the paramedic.

EMS Personnel Licensure Levels

These licensure levels are from the *National EMS Scope of Practice Model.* Each educational level assumes mastery of previously stated competencies. Every clinician must demonstrate each competency within their scope of practice and for patients of all ages.

Emergency Medical Responder

The emergency medical responder (EMR) is an out-of-hospital practitioner whose primary focus is to initiate immediate lifesaving care to patients while ensuring patient access to the emergency medical services system. EMRs possess the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response and rely on an EMS or public safety agency or larger scene response that includes other higher-level medical personnel. When practicing in less populated areas, EMRs may have a low call volume coupled with being the only care personnel for prolonged periods awaiting arrival of higher levels of care. EMRs may assist, but should not be the highest-level person caring for a patient during ambulance transport. EMRs are often the first to arrive on scene. They must quickly assess patient needs, initiate treatment and request additional resources.

Emergency Medical Technician

An emergency medical technician (EMT) is a health professional whose primary focus is to respond to, assess and triage emergent, urgent and non-urgent requests for medical care, and to apply basic knowledge and skills necessary to provide patient care and medical transportation to/from an emergency or health care facility. Depending on a patient's needs and/or system resources, EMTs are sometimes the highest level of care a patient will receive during an ambulance transport. EMTs often are paired with higher levels of personnel as part of an ambulance crew or other responding group. With proper supervision, EMTs may serve as a patient care team member in a hospital or health care setting to the full extent of their education, certification, licensure and credentialing. In a community setting, an EMT might visit patients at home and make observations that are reported to a higher-level authority to help manage a patient's care. When practicing in less populated areas, EMTs may have low call volume coupled with being the only care personnel during prolonged transports. EMTs may provide minimal supervision of lower-level personnel. EMTs can be the first to arrive on scene; they are expected to quickly assess patient conditions, provide stabilizing measures and request additional resources as needed.

Advanced Emergency Medical Technician

The advanced emergency medical technician (AEMT) is a health professional whose primary focus is to respond to, assess and triage non-urgent, urgent and emergent requests for medical care; apply basic and focused advanced knowledge and skills necessary to provide patient care and/or medical transportation; and facilitate access to a higher level of care when the needs of the patient exceed the capability level of the AEMT. The additional preparation beyond EMT prepares an AEMT to improve patient care in common emergency conditions for which reasonably safe, targeted and evidence-based interventions exist. Interventions within the AEMT scope of practice may carry more risk if not performed properly than interventions authorized for the EMR/EMT levels. With proper supervision, AEMTs may serve as a patient care team member in a hospital or health care setting to the full extent of their education, certification, licensure and credentialing. In a community setting, an AEMT might visit patients at home and make observations that are reported to a higher-level authority to help manage a patient's care.

Paramedic

The paramedic is a health professional whose primary focus is to respond to, assess and triage emergent, urgent and non-urgent requests for medical care; apply basic and advanced knowledge and skills necessary to determine patient physiologic, psychological, and psychosocial needs; administer medications, interpret and use diagnostic findings to implement treatment; provide complex patient care; and facilitate referrals and/or access to a higher level of care when the needs of the patient exceed the capability level of the paramedic. Paramedics often serve as a patient care team member in a hospital or other health care setting to the full extent of their education, certification, licensure and credentialing. Paramedics may work in community settings where they take on additional responsibilities monitoring and evaluating the needs of at-risk patients, as well as intervening to mitigate conditions that could lead to poor outcomes. Paramedics help educate patients and the public in the prevention and/or management of medical, health, psychological and safety issues.

About the Revised EMS Education Standards

2019 National EMS Scope of Practice Model Relationship

The recently released 2019 *National EMS Scope of Practice Model,* funded by NHTSA and HRSA, assembled experts to evaluate the scope of EMS practice for each of the four national practitioner levels (EMR, EMT, AEMT and paramedic). The 2019 *Scope of Practice Model* is the launching pad and guide for this revision of the *National EMS Education Standards*. The *Education Standards* reflect the 2019 and 2021 updated *Scope of Practice Model* and ensure practitioners receive the education and training they need to perform within their scopes and best serve their patients and communities.

The revision of the *National EMS Scope of Practice Model* and *National EMS Education Standards* are naturally interrelated, as one informs the other. As such, the team brought together to lead the revision of the *National EMS Education Standards* was funded by NHTSA and HRSA, and included 10 proven and renowned EMS educators. The *National EMS Scope of Practice Model,* recommendations from *EMS Agenda 2050*, known best practices, emerging technology, evidence-based medicine, information from the National EMS Database and societal issues were all considered. EMS stakeholder input and public comment were solicited and received multiple times throughout the revision process. The National Registry of EMTs also provided its Practice Analysis findings.

NREMT Practice Analysis

Several members of the EMS Education Standards Revision Team were involved in the NREMT's practice analysis working group. This process has informed the team regarding the most encountered EMS emergencies, according to the National EMS Database, made possible by the National EMS Information System (NEMSIS). In addition, the project revision team has reached out to NREMT throughout the revision project to obtain input and feedback. NREMT's practice analysis has been one of many critical resources consulted by the revision team.

Domains of EMS: Learning, Competency, Authorization and Operational/Local Qualification

The 2019 *National EMS Scope of Practice Model* identifies four domains within the "Professional Scope of Practice" and provides a structure for the differences between education, certification, licensure and credentialing (see definitions below). The EMS Education Standards Revision Team focused on education, or the learning domain.

- **Education, the learning domain** – This domain includes all didactic, psychomotor, and affective learning that an EMS learner should be taught during an EMS course to become an entry-level apprentice.

- **Certification, the competency verification domain** – This domain includes all external evaluation and verification processes that are led by an outside entity to ensure that a learner has achieved competency to be safe and effective when conducting duties as an entry-level EMS clinician. In most states, National Registry certification is used to verify competency.

- **Licensure, the legal authorization domain** – Licensure refers to the legal authority, granted by a state, to an individual to perform certain defined and restricted duties. The clinical duties usually vary from one state to the next. The term is not to be confused or referred to as "certification." As defined in the 2019 *Scope of Practice*

Model, certification and licensure are independent yet related processes. When state requirements are met, a state license is issued along with the legal authority to perform a role at the appropriate level of licensure.

- **Credentialing, the operational/local qualification domain** – Credentialing is the responsibility of the individual EMS organization and, in most cases, the medical director. Being that a learner has been educated, certified and licensed, the duty falls to the organization and local community to ensure that the EMS clinician is able to operate safely by following appropriate clinical and operational guidelines and philosophies set forth by the physician EMS medical director. Typically, this involves orientation courses with an evaluation and structured operational and clinical training programs. Credentialed providers have been taught and assessed on skills and actions that are beyond the entry-level education and training of an EMS school. For instance, if allowed by the state, ultrasound may be a role performed after proper credentialing by the local EMS medical director and jurisdiction, even though ultrasound is not included in the *National EMS Scope of Practice Model* or the *National EMS Education Standards*.

Because most EMS education programs teach students who will not all practice in the same organization, communities or even states, a one-size-fits-all education is not possible. The writing of a detailed national curricula for each of the four levels would be problematic. No educational institution can teach a learner every possible clinical or operational guideline or associated philosophy, nor can an educational entity train an individual about every clinical device used by EMS services across the nation. As a result, the credentialing process is a critical piece of preparing EMS clinicians to practice in their respective organizations after the completion of initial education and certification.

When a learner successfully concludes coursework and has satisfied a program's identified terminal requirements (Education Domain), the apprentice can then sit for an evaluation that provides verification of competency (Certification Domain). After successfully navigating the Licensure Domain with a state, a learner is deemed "entry-level." Finally, the entry-level clinician is ready for the Credentialing Domain of an employer, after which the learner is "job-ready." The term "entry-level" indicates that a learner has completed the education, certification, and licensure domains. "Job-ready" indicates that a learner has been credentialed by an employer and the local medical director, and is competent in the system's operational and clinical guidelines, policies and philosophies.

Common comments and recommendations that were received by the revision team addressed content areas that clearly did not apply to the entry-level education of an apprentice EMS clinician. Many suggestions fit within the credentialing domain and are not appropriate for national adoption at this time. The team worked hard to stay within the education domain for entry-level EMS clinicians.

Education Standards vs. Instructional Guidelines vs. Curriculum

The *National EMS Education Standards* outline the minimal competencies for entry-level EMS clinicians to achieve within the parameters outlined in the 2019 and 2021 updated *Scope of Practice Model*. Education programs should contemplate the *Standards* when developing curricula for national consistency. The *Standards'* format will allow diverse implementation methods to meet local needs and evolving education practices. The less prescriptive format of the *Standards* will also allow for ongoing revision of content consistent with scientific evidence, advances in technology, known "best practices" and community standards of care.

In general, the content of education standards can range from largely non-prescriptive to detailed and very prescriptive.

Non-Prescriptive Education Standards:

- increase teacher autonomy
- increase instructional flexibility
- increase responsiveness to student learning needs
- increase responsiveness to local needs and situations
- increase responsiveness to national trends

Prescriptive Education Standards:

- improve education consistency
- protect from societal harm that may result from low education expectations and/or low-quality instruction
- have been labeled as “burdensome checklists” by some educators and are problematic in medicine due to rapid changes in technology, scientific evidence and best practices

The *National EMS Education Standards* are not meant to stand as a comprehensive document guiding all of the development of EMS clinicians, but rather one part of a comprehensive system (Figure 3). EMS education programs will incorporate each element of the education system proposed in the *Education Agenda*. These elements include:

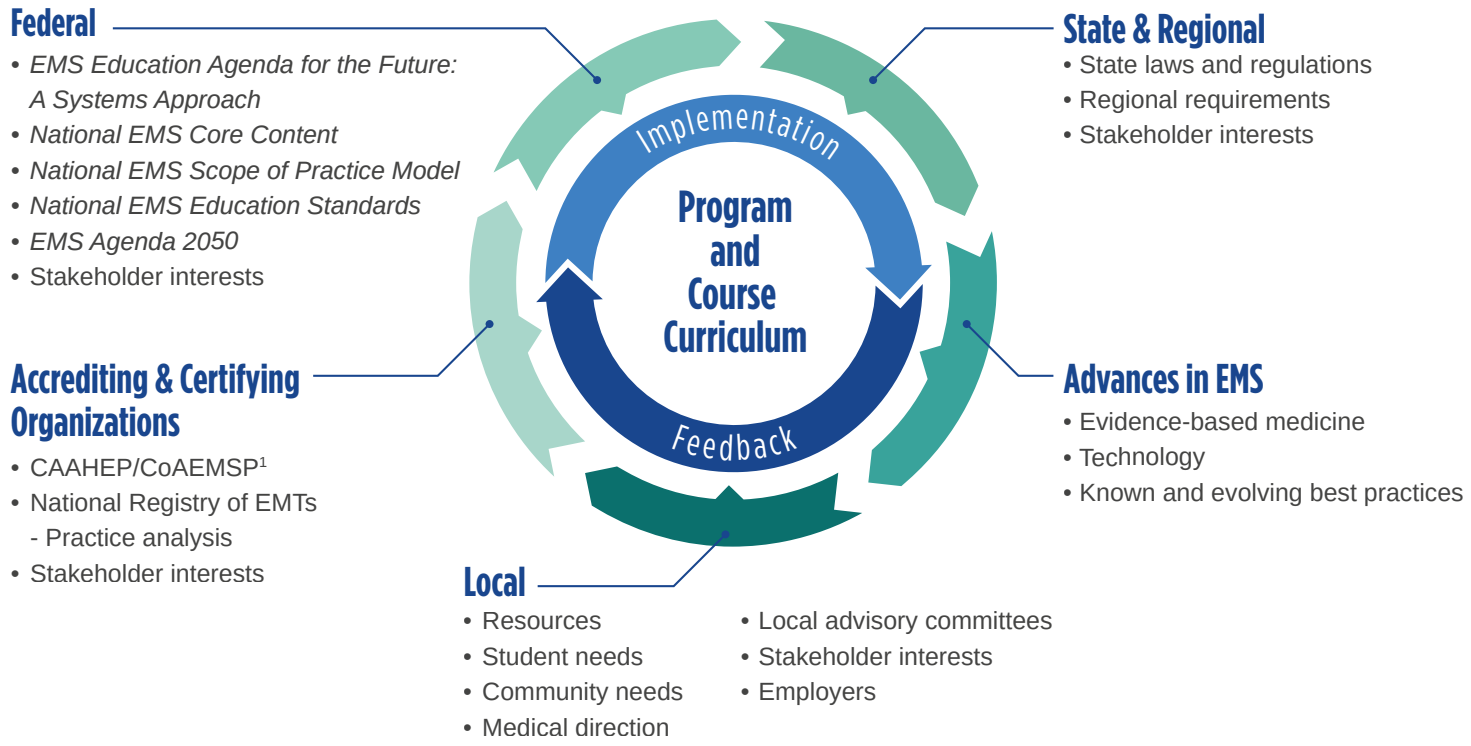
- National EMS Core Content
- National EMS Scope of Practice
- National EMS Education Standards
- National EMS Certification
- National EMS Program Accreditation

This integrated system is essential to achieving the goals of program efficiency, consistency of instructional quality and student competence as outlined in the *Education Agenda*.

While the *Education Standards* are developed at the national level, each state retains the right to wholly adopt the *Standards* or adopt and modify the *Education Standards* to fit a state’s unique needs. The *National EMS Education Standards* have been created to provide states with a vetted, consensus-driven foundation for EMS education. They also benefit clinicians by paving the way for national certification and easier transition from one locality or state to another.

Individual EMS educators and local communities select or create curricula based on a multitude of curriculum influencers. These influencers can also be strong mechanisms for education program accountability. Regional needs, accreditation standards and state and local policies and regulations are a few examples. Curricula design, implementation and adjustment are complex processes. Specific curricular content, instructional strategies and competency evaluation processes should be resolved at the education program level through implementation and feedback. Regulatory rules must be adhered to as well. Decisions on curriculum implementation are based on local situations, students’ needs and available resources. Figure 3 illustrates numerous inputs and points for accountability when curricula are designed, implemented and adjusted. Program directors, faculty and education institutions would be wise to consider each influence.

Figure 3: Influences on EMS Education Curriculum Development



1 CAAHEP: Commission on Accreditation of Allied Health Education Programs, CoAEMSP: Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions

Where are the Instructional Guidelines?

The 2009 instructional guidelines (IGs) were originally designed to help educators transition from the *National Standard Curricula* developed in the 1990s to the 2009 *Education Standards*.

When the revision team met, a discussion ensued regarding the ongoing usefulness of the IGs in their current form. It was agreed that the addition of the existing four IGs (EMR, EMT, AEMT and paramedic) to the *Education Standards* made the documents too cumbersome to be easily useful.

It was also evident that, while much of the IGs remained relevant, several sections had become outdated because of changes in evidence-based medicine, best practices or technology. Simultaneously, it was felt that it would be useful to have a level of specificity within the *Education Standards* rather than require educators to look in multiple places when seeking guidance to create curricula.

The resulting document combined elements of the IGs with the overarching principles of the *Education Standards*. A level of knowledge depth and breadth is provided for each section

of the *Standards*. At a glance, trained educators will be able to determine the extent of information to be provided to their students. The result is an enriched blueprint of the education and training of today's EMS clinicians.

Beyond the Scope of the Project

There are four areas that were frequently brought up by stakeholders but not part of the project. Specialty certification education (critical care paramedic, community paramedic, tactical medic); degree requirements at any clinician level; nomenclature of the EMS profession and clinicians; and continuing education requirements were beyond the scope of this effort. Instead, the focus was to align the *Education Standards* with the newly released 2019 *Scope of Practice Model*.

Degree Requirements

The revision team heard numerous comments regarding degree requirements. Clearly, some parties strongly desire degree requirements for paramedics. Others strongly oppose them. Currently, there is not an industry consensus for degree requirements for EMS personnel. In many cases, several significant EMS stakeholders and the "larger" EMS community take a more neutral position. Time will allow for further discussion and debate on the topic. Early in the process, the team was advised that the debate for or against degrees was beyond the scope of the project as the 2021 *National EMS Education Standards* do not address degree requirements.

The team also received recommendations for education related to deeper clinical subject matter, leadership and management, public health, education, social work, research, and other areas related to EMS systems. One national stakeholder called for courses in health systems science and value-based care. Suggested courses included:

- Health care system structure and processes
- Health care policy, economics, and management
- Clinical informatics and health information technology
- Public/population health
- Health system improvement and person-centered care
- Structure and processes beyond EMS
- Health care reimbursement and finance
- Health care quality and safety

AEMT Accreditation

The 2019 *National EMS Scope of Practice Model* subject matter expert panel recommended requiring AEMT program accreditation by January 1, 2025. The panel deliberated and came to a consensus on the matter with the involvement of 13 stakeholders and various independent contributors. Despite this understanding in 2019, the topic continues to be passionately debated. The *Education Standards* revision team supports this recommendation. The revision team deliberated the topic and concluded that accreditation is an original and identified goal of the *2000 EMS Education Agenda*. Through the use of collegial evaluation practices and the identification of recognized routines for establishing sound EMS education programs, program accreditation is expected to promote clinical and educational excellence by ensuring the availability of adequate resources and services for educators and their students.

Portable Technologies

During the public comment periods, many participants identified the need for education standards that covered new and

emerging technologies. There were specific and repeated recommendations for Point-of-Care Ultrasound (POCUS); the 2019 *Scope of Practice Model* subject matter experts directly addressed this skill and have determined that "portable technology" (which includes POCUS) has been left to the "credentialing" process of the EMS organization and medical director. The *Standards* revision team believes that the ideal time for use of these technologies is when a person has been educated, deemed competent, licensed and credentialed with knowledge and skill. The local EMS medical director should be involved in the selection of technologies. Widespread education based on specific technologies should be decided at the local or state level. Only after national adoption and inclusion in a practice analysis should technologies be included in the *National EMS Education Standards* and *National EMS Scope of Practice Model.*

Instructional Practices: Simulation, Shadowing & Interprofessional Education

Because education standards are not intended to be a curriculum, the instructional strategies of simulation, shadowing and interprofessional education are addressed here but not in the *Standards* themselves. The team does believe that an education program should implement numerous instructional techniques to accommodate the diversity of student learning needs inside and outside the EMS classroom. Using numerous instructional strategies will help reach every learner. A heavy reliance on the traditional lecture is not ideal and is not equitable, as some students learn better in different settings and every student benefits from experiencing other methods of instruction. Three types of instructional practices were identified by the public and various stakeholders: simulation, shadowing and interprofessional education. The team believes that each practice has merit and should be considered as an additional instructional strategy.

Simulation

EMS simulation begins in the classroom with educators creating realistic scenarios to train all levels of EMS personnel. The practice of allowing students to memorize and verbalize a check sheet is no longer acceptable and should be changed. Simulation has proven to increase critical thinking skills and reduce medical errors in our health care system. Simple to complex simulation comes in many forms, from table-top exercises and practicing intramuscular injections on an orange to standardized live patients and high-fidelity manikins. Cost will vary, but simulation does not have to be expensive to be successful. Simulation in EMS can achieve:

- The creation of a "safe-to-fail" environment in which students can make mistakes without dire consequences and learn from those mistakes
- Higher success rates on the NREMT psychomotor exams
- Enhanced understanding and more robust therapeutic communication
- Increased understanding and demonstration of affective domain competencies
- Improvement in critical thinking skills of entry-level personnel
- Improved safety, effectiveness and efficiency of services
- Substitution for infrequent or unattainable clinical scenarios

Shadowing

Shadowing a practicing clinician offers students experiential, hands-on learning opportunities, and many learners have a special affinity for it. Shadowing affords a prospective EMS

professional the chance to be immersed in the actual job environment, making it possible to see an experienced worker apply the skills and traits needed to accomplish the work.

Interprofessional Education

Health care is best when delivered in a cooperative team environment; collaboration can result in improved communications, thus reducing medical errors, reducing costs for patients and improving patient outcomes. Interprofessional Education is a proven instructional method that results in positive outcomes in clinical preparation, health care profession education and public safety. Interprofessional Education helps a learner realize how EMS fits into the larger "continuum of care" and plays a role in critical "systems of care." Learning how patients move through the health care system, from dispatch to discharge to follow-up care, plays a critical role in patient safety. Interaction with other health care providers and first responders during initial education will mutually enhance an understanding of everyone's roles in the system.

Out-of-hospital care is becoming more diverse and complex. As a result, individual EMS instructors may not possess the expertise or knowledge to teach all subjects within the revised *Standards*. When this occurs, a subject matter expert should be enlisted for the given topic. For instance, the public health section has been expanded and it would be a "best practice" to bring in a qualified content expert to cover the topic. Many areas related to EMS operations would also require a qualified content expert. Rescue operations have become extremely broad and specialized. Bodies of knowledge such as incident command, hazardous materials and other unique topics require experience and specialized knowledge for quality instruction. The instructor should have a proper background, relevant knowledge and a degree or a recognized and credible credential in the topic. It is recommended that the EMS educator work with the subject matter experts to ensure relevance of the content to the practice of prehospital medicine.

Eminence of the Affective Domain

Competence in the affective domain of learning is critical to the success of EMRs, EMTs, AEMTs and Paramedics. The *National EMS Education Standards* focus on the knowledge and skills that an entry-level practitioner needs to treat sick or injured patients. The third dimension needed for any skilled EMS clinician is related to values, attitude, professional behavior, compassion and a willingness to serve. Values provide the foundation for decisions, and attitudes reflect values and influence interpersonal dynamics. Professional behavior is a key component of medical practice, and compassion is a required characteristic of medical professionals supporting clinical knowledge and skill. A willingness to serve underlies all that a health care provider does.

The importance of affective domain competence cannot be overstated. Every EMS education program director and faculty member should consider this aspect of medical practice. Modeling and setting professional-level expectations for affective domains are part of the educational duty of an educator within career and technical school. From the very first day of class until course conclusion, the importance of teaching and evaluating affective domain competency to ensure graduates are fully prepared for professional practice should be identified as a high priority and a universal goal.

Sequence of Instruction

The order of the *National EMS Education Standards* does not imply any particular sequence of instruction. For example, some topics, such as public health, could be taught early on or later in a course, despite appearing early in these *Standards*. Other topics, such as basic assessment skills, would likely

come early in the clinician's education and precede concepts that build upon them. Curricular flow should be determined by the education program director, with input from faculty, medical direction and advisory committees.

Locally Identified Topics

The revision team recognized and heard numerous comments regarding clinical content that is of great local need and yet may not be essential as an item for the entire nation. As a result, the team believed it would be best to include a statement that some content should be locally determined and developed at the simple depth, simple breadth level (or higher when desired). This content should be identified, developed and implemented using a program medical director, advisory boards, the larger medical community or faculty judgement.

Implicit Expectations

For a given illness, condition, or traumatic injury, the implicit expectation is that an educational program will include instruction of the relevant anatomy, physiology, pathophysiology, assessments and accepted treatments. The team determined that this expectation is known by educators and repeating the statement in each section of the document is not required or desired.

Additional Resources

It is impossible for EMS instructors to know everything about the profession, and trying to stay up to date on the latest evidence-based guidelines, best practices, industry standards and research is a very difficult task. The resources found in Appendix A are intended as tools for educators to use as needed to remain current on changes in the field.

Two critical sources that educators should consider referencing as they create learning content are the National Model EMS Clinical Guidelines, maintained by the National Association of State EMS Officials (NASEMSO), and pre-hospital evidence-based guidelines, many of which are produced through the efforts of The Prehospital Guidelines Consortium, maintained by the National Association of EMS Physicians (NAEMSP). The guidance provided by these sources is a result of collaboration among many national EMS stakeholders intent on promoting consensus and evidence to inform a general standard of prehospital care.

Summary of Significant Changes to the EMS Education Standards

Behavioral/Psychiatric

Many, if not most EMS systems have seen a steady rise in behavioral emergencies and patients experiencing acute and chronic manifestations of psychiatric illnesses. Moreover, a lack of available in-patient beds at mental health facilities has resulted in EMS clinicians needing to manage these patients for longer periods of time and over longer distances.

As a result, the behavioral/psychiatric section of the *Education Standards* was revised to include more information regarding acute behavioral crisis and mental health disorders. Greater depth and breadth of knowledge were recommended for areas involving potential safety hazards to patients and EMS clinicians. Conversely, certain psychiatric disease and syndrome areas were revised and simplified.

Cultural Humility

Throughout health care and related fields, there has been a recognition of the importance of maintaining an awareness of the assumptions and biases related to cultural issues and how they may affect our patients, co-workers and students. Cultural humility is a lifelong, ongoing process of self-reflection and self-critique in which one learns about others' cultural identities and looks at how one's own background and social environment have shaped the individual. Cultural humility in EMS should address:

- **Education:** Are our EMS educators diverse? Does our student population reflect the community? Are our classrooms free of stereotypes? Do we understand our own biases and the differences between all of our students?
- **EMS workforce:** Are we creating a diversified and equitable workforce reflective of our population? Promoting cultural humility can help strengthen relationships among staff, leadership, patients and families and other health care personnel we interact with on a daily basis.
- **Patient care:** Are we teaching cultural competency and humility to our EMS students? After graduation, can our students provide culturally competent, equitable and medically appropriate prehospital care to each and every patient no matter their background? Cultural humility leads to higher-quality care and better communication and trust between patients and clinicians.

EMS Operations

EMS operations, while extremely important, are determined by a variety of factors, including the setting, the clinician's role and the EMS system design. Therefore, it is not possible to provide strict and straightforward training requirements that would be appropriate across these diverse settings. Next is a summary of the intent of each section of the EMS operations education standards. EMS educators and EMS institutions need to be able to work with local and state agencies to determine the appropriate level of knowledge that providers need to perform their duties safely and efficiently.

- **Principles of Safely Operating EMS Emergency Response Vehicles**

  The intent of this section is to give an overview of emergency response to ensure the safety of EMS personnel, patients and others during EMS response vehicle operations. This does not prepare the entry-level student to be an experienced and competent driver. Appropriate driver training designed for the entry-level provider must be completed as required by state and local regulations and is not intended to be part of a requirement to achieve national certification as an emergency medical responder. Information related to the clinical management of the patient during emergency response is found in the clinical sections of the *National EMS Education Standards* for each personnel level.

- **Incident Management**

  Information related to the clinical management of the patient within components of the Incident Management System is found in the clinical sections of the *National EMS Education Standards* for each licensure level. The material presented in this section should be delivered by an individual who has been trained and has the proper credentials to educate students in these areas. The material may be obtained in-person or through distance learning as determined by state and local requirements.

- **Mass Casualty Incidents**

  The intent of this section is to give an overview of operating during a mass casualty incident when a multiple casualty incident plan is activated. Information related to the clinical management of the patients during a multiple casualty incident is found in the clinical sections of the *National EMS Education Standards* for each licensure level. The depth and breadth of training that must be achieved by clinicians at each level should be determined by state and local requirements.

- **Landing Zone Operations**

  The intent of this section is to give an overview of operating safely in and around a landing zone during air medical operations and transport. The safety considerations of setting up and operating in a landing zone should be taught by properly trained experts who have the proper knowledge and experience in the area of air medical transportation. The depth and breadth of information that is needed by each level of clinician should be determined by state and local regulations. Information related to the clinical management of the patient being cared for during air medical operations is found in the clinical sections of the *National EMS Education Standards* for each licensure level.

- **Rescue Operations**

  The intent of this section is to provide an overview of rescue operations including, but not limited to, vehicle extrication, low/high angle, water, trench and confined space to ensure the safety of EMS personnel and patients during these events. This does not prepare the entry-level student to become competent or qualified to work in these rescue environments. Information related to the clinical management of the patient being cared for during rescue incidents is found in the clinical sections of the *National EMS Education Standards* for each personnel level.

- **Hazardous Materials**

  Information related to the clinical management of the patient exposed to hazardous materials is found in the clinical sections of the *National EMS Education Standards* for each personnel level. This information may be done as a corequisite or prerequisite, or as part of the entry-level course as determined by state and local requirements.

Training in this area should only be done by those properly trained and credentialed to provide the required training. Federal regulations require that, at a minimum, EMS personnel must be trained at the Hazardous Materials Awareness level. State and local regulations may have additional requirements that are above and beyond federal regulations. EMS educators should work in collaboration with local fire or emergency management authorities to determine the proper training level required and assuring that properly credentialed instructors are providing the training. The information contained in the hazardous materials awareness programs are above and beyond the scope of national EMS programs for the entry-level provider.

- **Mass Casualty Incidents Due to Active Threats and Disaster**

  The intent of this section is to give an overview of operating during a terrorist event or during a natural or man-made disaster. Instruction in this area should be done by properly trained and knowledgeable individuals in this area. State and local regulations may have additional requirements that are above and beyond federal regulations. Information related to the clinical management of patients exposed to a terrorist event or involved in a disaster is found in the clinical sections of the *National EMS Education Standards* for each personnel level.

Public Health

Since the release of the original *National EMS Education Standards* in 2009, EMS has made substantial progress from being viewed as simply a provider of medical transport to a true out-of-hospital health care resource. The changes to the public health section of the *Standards* reflect this evolution in EMS. Public health prevention and pandemic preparedness efforts are essential functions in the future as EMS continues to be at the crossroads between health care, public health and public safety. The EMS clinician of the future will be expected to integrate into pandemic plans, assist in vaccinations and act as the initial point of entry into robust community health programs.

The new standards are intended to prepare the entry-level provider to work alongside and collaboratively with specially trained community paramedics, social workers, public health organizations, health care entities, emergency management agencies and non-governmental organizations in their day-to-day duties, and lay the foundation for advancement into specialized roles.

Pharmacology

An EMS culture of safety is a universal goal within the industry. A key area for safety is the administration of medications in the prehospital setting. The lack of desired pharmacology competency among EMS program graduates was identified by the *EMS Scope of Practice* subject matter experts, in EMS evidenced-based literature and numerous other sources. When it comes to pediatric populations, EMS for Children identified a significant need for additional training in this area and called for specific teaching for pediatric dosing and troubleshooting abnormal situations. As a result, the pharmacology section has been expanded for EMR, EMT, AEMT and paramedics. It is not enough to solely teach pharmacology in a traditional didactic manner. This skill should include didactic, psychomotor and affective instruction. There should be significant opportunities to practice the skill before leaving the education program. Simulation and, ideally, actual patient encounters should be offered to students. Emphasis and specific focus should be given to psychomotor practice of adult, pediatric and geriatric medication administration due to the complexity of drug dosing and the chance of error.

EMS Safety, Wellness and Resilience

Workforce safety and wellness has been expanded to reflect principles of stress management, responder mental health, resilience and suicide prevention across all levels. With greater number of responders reporting thoughts of suicide, and suicide rates among first responders significantly exceeding those of the general population, a foundational level of knowledge is crucial to addressing this professional and occupational crisis. An overall greater emphasis on mental health resources is also recommended.

Standard safety precautions, use of personal protective equipment, illness and injury prevention, and lifting and moving patients continue to be emphasized at all levels of emergency responders. Other areas that have been added include crew resource management across all levels and disease transmission in the EMT, AEMT and paramedic curricula.

Pediatric and Geriatric Content Competencies

Individual sections for pediatrics and geriatrics have been removed, with education content addressing these special populations now incorporated throughout the education standards. This change is based on recommendations from pediatric-focused stakeholders, scientific evidence and consensus among clinical partners.

Concepts related to geriatric and pediatric patients deserve equitable attention and should be taught repeatedly throughout every section of a course resulting in an earlier assimilation of the content. Pediatric stakeholders reported that anxiety, unfamiliarity with pediatric patients and equipment, and discomfort on the part of rescuers calls for aggressive remedies. These findings may be associated with the low frequency and high acuity of pediatric encounters.

The need for better EMS assessment, diagnosis, treatment, safe medication administration, airway management and appropriate pain management has been identified. In every aspect of education, troubleshooting and critical thinking are required when clinical situations are confusing or problematic. As students acquire knowledge, skills and abilities, opportunities to compare and contrast pediatric, adult and geriatric populations will enhance and deepen learning.

During each section of the *Standards*, relevant pediatric and geriatric content should be discussed in detail as they aren't covered in a separate section. Incorporation of this special population information into the general content should improve the comfort level of students by making the care of these patients part of everyday operations.

EMS education should include knowledge from the cradle to the grave. Pediatric and geriatric topics should no longer be minimized, in comparison to "adult" topics, or relegated to an isolated component of an EMS course, which can create a perception that the content is somehow less important.

EMS education and care should be family-centered. Family-centered care is a clinical methodology for the planning, delivery and evaluation of health care which is established in an affirming partnership that collaboratively involves patients, families and the health care providers. Family-centered care represents a significant transition away from paternalistic medicine to that which is founded on pillars of respect, collaboration, information sharing and shared decision-making.

While family-centered care is often taught as an area of focus for children with special needs, it should be integrated into the care of all patients. In the case of children with special health care needs, the family's knowledge of a child's condition can be immensely valuable. Yet, even among children with

simple, acute medical emergencies, families and children often experience high levels of stress. Family-centered care seeks to help patients and families retain a sense of control. This includes providing opportunities for family members to be present during medical transport and invasive procedures. The approach recognizes that each family is unique, integral and essential for health care safety and quality. The values of collaboration, responsiveness and united decision-making are at the forefront of treatment. The beliefs, desires, and values from cultural backgrounds of the family and patient are considered and respected. Health care workers communicate with complete information and in an unbiased and respectful manner. When choices are made, decision-making involves all parties as coequal parts and decision-makers are known and informed, and health care clinicians listen to and honor patient and family choices. When family-centered care is optimal, there is high-quality care with safety, and family and patient satisfaction are achieved.

The reader will find phrases such as “include age-related variations in pediatric and geriatric patients” and “include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients.” These phrases are intended to remind and direct EMS educators to elevate the importance of geriatric and pediatric education within each section.

National EMS Education Standards

LEGEND

The first letter refers to **Breadth**, which can be:
- Simple (S)
- Foundational (F)
- Comprehensive (C)

The second letter refers to **Depth**, which can be:
- Simple (S)
- Fundamental (F)
- Complex (C)

For more information refer to Fig. 2 and Fig. 2.1 (Depth/Breadth Terminology) on p.11-12.

		EMR	EMT	AEMT	Paramedic
Preparatory	**Preparatory**	**Uses knowledge of the EMS system, safety/well-being of the EMR, medical/legal issues and ethical issues at the scene of an emergency while awaiting a higher level of care.**	**Applies knowledge of the EMS system, safety/well-being of the EMT, medical/legal and ethical issues to the provision of emergency care.**	**Applies knowledge of the EMS system, safety/well-being of the AEMT, medical/legal and ethical issues to the provision of emergency care.**	**Integrates knowledge of EMS systems, the safety/well-being of the paramedic, and medical/legal and ethical issues intended to improve the health of EMS personnel, patients and the community.**
	EMS Systems	• EMS systems (S,S) • Roles, responsibilities and professionalism of EMS personnel (S,S) • Quality improvement vs. quality assurance (S,S) • Role of medical oversight (S,S) • Culture of safety / patient safety (S,S) • Continuum of care (S,S)	• EMS systems (S,F) • Roles, responsibilities and professionalism of EMS personnel (F,F) • Quality improvement vs. quality assurance (S,F) • Role of medical oversight (S,S) • Culture of safety / patient safety (S,F) • Continuum of care (S,F) • History of EMS (S,F) • Systems of care, e.g., Stroke, STEMI, Trauma, Pediatrics (S,F) • MIH/CP and other EMS-related specialty roles (S,S)	• EMS systems (S,F) • Roles, responsibilities and professionalism of EMS personnel (F,F) • Quality improvement vs. quality assurance (F,F) • Role of medical oversight (F,F) • Culture of safety / patient safety (F,F) • Continuum of care (F,F) • History of EMS (S,F) • Systems of care, e.g., Stroke, STEMI, Trauma, Pediatrics (F,F) • MIH/CP and other EMS-related specialty roles (F,F)	• EMS systems (C,C) • Roles, responsibilities, and professionalism of EMS personnel (C,C) • Quality improvement vs. quality assurance (C,C) • Role of medical oversight (C,C) • Culture or safety / patient safety (C,C) • Continuum of care (F,F) • History of EMS (F,F) • Systems of care, e.g., Stroke, STEMI, Trauma, Pediatrics (C,C) • MIH/CP and other EMS-related specialty roles (F,F)

		EMR	EMT	AEMT	Paramedic
Preparatory	Workforce Safety and Wellness	• Standard safety precautions (S,S) • Personal protective equipment (S,S) • Lifting and moving patients (S,S) • Crew resource management (S,S) • Stress management (F,F) • Prevention of work-related injuries and illnesses (F,F) • Responder mental health, resilience and suicide prevention (F,F) • Wellness principles (F,F) • Disease transmission (S,S)	• Standard safety precautions (F,F) • Personal protective equipment (F,F) • Lifting and moving patients (F,F) • Crew resource management (F,F) • Stress management (F,F) • Prevention of work-related injuries and illnesses (F,F) • Responder mental health, resilience and suicide prevention (F,F) • Wellness principles (F,F) • Disease transmission (F,F)	• Standard safety precautions (F,F) • Personal protective equipment (F,F) • Lifting and moving patients (F,F) • Crew resource management (F,F) • Stress management (F,F) • Prevention of work-related injuries and illnesses (F,F) • Responder mental health, resilience and suicide prevention (F,F) • Wellness principles (F,F) • Disease transmission (F,F)	• Standard safety precautions (C,C) • Personal protective equipment (C,C) • Lifting and moving patients (C,C) • Crew resource management (F,F) • Stress management (C,C) • Prevention of work-related injuries and illnesses (C,C) • Responder mental health, resilience and suicide prevention (C,C) • Wellness principles (C,C) • Disease transmission (C,C)
	Research	• Impact of research on EMR care (S,S) • Data collection (S,S)	• Impact of research on EMT care (S,S) • Data collection (S,S) • Evidence-based decision making (S,S)	• Impact of research on AEMT care (S,S) • Data collection (S,S) • Evidence-based decision making (S,S)	• Impact of research on Paramedic care (S,S) • Data collection (S,S) • Evidence-based decision making (S,S) • Research principles to interpret literature and advocate evidence-based practice (F,F)
	Documentation	• Recording patient findings (S,S)	• Recording patient findings (S,S) • Principles of medical documentation and report writing (F,F) • Supporting medical necessity (S,S)	• Recording patient findings (S,S) • Principles of medical documentation and report writing (C,F) • Supporting medical necessity (S,S)	• Recording patient findings (S,S) • Principles of medical documentation and report writing (C,C) • Supporting medical necessity (S,S)
	EMS System Communication	• Call for resources (S,S) • Transfer care of the patient (S,S) • Interact within the team structure (S,S)	• EMS communication system (S,S) • Communication with other health care professionals to include cohesive and organized patient handoff (S,S) • Team communication and dynamics (S,S) • Telemetric monitoring devices and transmission of clinical data, including video data (S,S)	• EMS communication system (F,F) • Communication with other health care professionals to include cohesive and organized patient handoff (F,F) • Team communication and dynamics (F,F) • Telemetric monitoring devices and transmission of clinical data, including video data (S,S)	• EMS communication system (C,C) • Communication with other health care professionals to include cohesive and organized patient handoff (C,C) • Team communication and dynamics (C,C) • Telemetric monitoring devices and transmission of clinical data, including video data (S,S)

		EMR	EMT	AEMT	Paramedic
Preparatory	Therapeutic Communication	• Health care literacy (S,S) • Interviewing techniques (S,S) • Verbal defusing strategies (S,S) • Managing communication challenges (S,S) • Family centered care (S,S)	• Health care literacy (S,S) • Interviewing techniques (F,F) • Verbal defusing strategies (F,F) • Managing communication challenges (F,F) • Family centered care (F,F) • Adjusting communication strategies for age, stage of development, patients with special needs (S,S) • Non-discriminatory communication that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome (S,S)	• Health care literacy (F,F) • Interviewing techniques (F,F) • Verbal defusing strategies (F,F) • Managing communication challenges (F,F) • Family centered care (F,F) • Adjusting communication strategies for age, stage of development, patients with special needs (S,S) • Non-discriminatory communication that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome (S,S)	• Health care literacy (C,C) • Interviewing techniques (C,C) • Verbal defusing strategies (F,F) • Managing communication challenges (C,C) • Family centered care (F,F) • Adjusting communication strategies for age, stage of development, patients with special needs (C,C) • Non-discriminatory communication that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome (C,C)
	Medical/Legal and Ethics	• Consent/refusal of care (S,S) • Confidentiality (S,S) • Advanced directives (S,S) • Tort and criminal actions (S,S) • Evidence preservation (S,S) • Statutory responsibilities (S,S) • Mandatory reporting (S,S) • Ethical principles/moral obligations (S,S) • End-of-life issues (S,S)	• Consent/involuntary consent/ refusal of care (F,F) • Confidentiality (F,F) • Advanced directives (F,F) • Tort and criminal actions (F,F) • Evidence preservation (F,F) • Statutory responsibilities (F,F) • Mandatory reporting (F,F) • Ethical principles/moral obligations (F,F) • End-of-life issues (S,S) • Patient rights/advocacy (S,S)	• Consent/involuntary consent/ refusal of care (F,F) • Confidentiality (F,F) • Advanced directives (F,F) • Tort and criminal actions (F,F) • Evidence preservation (F,F) • Statutory responsibilities (F,F) • Mandatory reporting (F,F) • Ethical principles/moral obligations (F,F) • End-of-life issues (S,S) • Patient rights/advocacy (S,S)	• Consent/involuntary consent/ refusal of care (C,C) • Confidentiality (C,C) • Advanced directives (C,C) • Tort and criminal actions (C,C) • Evidence preservation (F,F) • Statutory responsibilities (C,C) • Mandatory reporting (C,C) • Ethical principles/moral obligations (C,C) • End-of-life issues (C,C) • Health care regulation (C,C) • Patient rights/advocacy (C,C) • Ethical tests and decision making (C,C)

	EMR	EMT	AEMT	Paramedic
Anatomy and Physiology	Uses knowledge of the anatomy and function of the upper airway, heart, vessels, blood, lungs, skin, muscles and bones as the foundation of emergency care.	Applies knowledge of the anatomy and function of all human systems to the practice of EMS.	Integrates knowledge of the anatomy and physiology of the airway, respiratory and circulatory systems to the practice of EMS.	Integrates knowledge of the anatomy and physiology of all human systems

	EMR	EMT	AEMT	Paramedic
Medical Terminology	Uses medical and anatomical terms.	Uses anatomical and medical terms and abbreviations in written and oral communication with colleagues and other health care professionals.	Same as EMT Level	Integrates anatomical and medical terminology and abbreviations into written and oral communication with colleagues and other health care professionals.

	EMR	EMT	AEMT	Paramedic
Pathophysiology	Uses knowledge of shock and respiratory compromise to respond to life threats.	Applies knowledge of the pathophysiology of respiration and perfusion to patient assessment and management.	Applies knowledge of the pathophysiology of respiration and perfusion to patient assessment and management.	Integrates knowledge of pathophysiology of major human systems.

	EMR	EMT	AEMT	Paramedic
Life Span Development	Uses knowledge of age-related differences to assess and care for patients.	Applies knowledge of life span development to patient assessment and management.	Same as EMT Level	Integrates knowledge of life span development.

		EMR	EMT	AEMT	Paramedic
Public Health	**Public Health**	**Has an awareness of local public health resources and their role in public health.**	**Applies knowledge of the principles of public health epidemiology including public health emergencies, public health monitoring, health promotion and illness and injury prevention.**	**Same as EMT level**	**Applies knowledge of principles of public health and epidemiology including public health emergencies, health promotion and illness and injury prevention.**
	Public Health Overview	• EMS roles in public health (S,S) • Infection prevention and control (S,S) • Human trafficking (S,S)	• EMS roles in public health (S,S) • Infection prevention and control (S,S) • Human trafficking (S,S) • EMS EHR reporting and data collection (S,S) • Governmental/ nongovernmental roles & resources (S,S) • Public health mission and goals (S,S) • Social, geographic, economic, demographic determinants of health (S,S) • Patient and community education (S,S) • Injury prevention and wellness (S,S) • Unique pediatric, geriatric and special populations public health concerns (S,S) • Screenings and vaccinations/ immunizations (S,S)	• EMS roles in public health (S,S) • Infection prevention and control (S,S) • Human trafficking (S,S) • EMS EHR reporting and data collection (S,S) • Governmental/ nongovernmental roles & resources (S,S) • Public health mission and goals (S,S) • Social, geographic, economic, demographic determinants of health (S,S) • Patient and community education (S,S) • Injury prevention and wellness (S,S) • Unique pediatric, geriatric and special populations public health concerns (S,S) • Screenings and vaccinations/ immunizations (F,F) • Impacts of political, social and economic issues (F,F) • Infectious disease (F,F)	• EMS roles in public health (C,F) • Infection prevention and control (F,F) • Human trafficking (S,S) • EMS EHR reporting and data collection (S,S) • Governmental/ nongovernmental roles & resources (S,S) • Public health mission and goals (S,S) • Social, geographic, economic, demographic determinants of health (S,S) • Patient and community education (S,S) • Injury prevention and wellness (S,S) • Unique pediatric, geriatric and special populations public health concerns (S,S) • Screenings and vaccinations/ immunizations (C,F) • Impacts of political, social and economic issues (F,F) • Infectious disease (C,F) • Patient disposition, selecting destination, ambulance transport (C,F) • Bioinformatics (C,F)

		EMR	EMT	AEMT	Paramedic
Pharmacology	**Pharmacology**	**Uses knowledge of the medications that the EMR may administer in an emergency.**	**Applies knowledge of the medications the EMT may administer to a patient during an emergency and chronic or maintenance medications the patient may be taking.**	**Applies (to patient assessment and management) knowledge of the medications carried by AEMTs that may be administered to a patient during an emergency and chronic or maintenance medications the patient may be taking.**	**Integrates knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient.**
	Principles of Pharmacology	• Medication safety (S,S) • Kinds of medications used during an emergency (S,S)	• Medication safety (F,F) • Medication legislation (F,F) • Naming (F,F) • Classifications (F,F) • Storage and security (F,F) • Medication interactions (S,S) • Adverse drug reactions (S,S) • Metabolism and excretion (F,F) • Mechanism of action (F,F) • Medication response relationships (F,F)	• Medication safety (C,C) • Medication legislation (C,C) • Naming (C,C) • Classifications (C,C) • Storage and security (C,C) • Medication interactions (C,C) • Adverse drug reactions (C,C) • Pharmacokinetics (C,C) • Pharmacodynamics (C,C) • Schedules (C,C)	• Medication safety (C,C) • Medication legislation (C,C) • Naming (C,C) • Classifications (C,C) • Storage and security (C,C) • Medication interactions (C,C) • Adverse drug reactions (C,C) • Pharmacokinetics (C,C) • Pharmacodynamics (C,C) • Schedules (C,C)
	Medication Administration	• Use a Medication Cross Check procedure (S,S) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Use of tools/resources to facilitate safe administration of weight-based dosing.	• Use a Medication Cross Check procedure (F,F) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Administer medications to a patient (F,F) • Provide pain management, including ethical and safety considerations (F,F) • Routes of administration (S,S)	• Use a Medication Cross Check procedure (F,F) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Administer medications to a patient (C,C) • Provide pain management, including ethical and safety considerations (C,C) • Routes of administration (C,C) • Resources for safe administration of weight-based dosing (F,F)	• Use a Medication Cross Check procedure (F,F) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Administer medications to a patient (C,C) • Provide pain management, including ethical and safety considerations (C,C) • Routes of administration (C,C) • Resources for safe administration of weight-based dosing (F,F)

		EMR	EMT	AEMT	Paramedic
Pharmacology	Acute Medications	• Names (S,S) • Effects (S,S) • Indications (S,S) • Contraindications (S,S) • Side effects (S,S) • Routes of administration (S,S) • Dosages (S,S)	• Names (F,S) • Effects (S,S) • Indications (F,S) • Contraindications (F,S) • Side effects (F,S) • Routes of administration (F,S) • Dosages (F,S) • Actions (F,S) • Complications (F,S) • Interactions (F,S)	• Names (C,C) • Effects (C,C) • Indications (C,C) • Contraindications (C,C) • Side effects (C,C) • Routes of administration (C,C) • Dosages (C,C) • Actions (C,C) • Complications (C,C) • Interactions (C,C)	• Names (C,C) • Effects (C,C) • Indications (C,C) • Contraindications (C,C) • Side effects (C,C) • Routes of administration (C,C) • Dosages (C,C) • Actions (C,C) • Complications (C,C) • Interactions (C,C)
	Chronic or Maintenance Medications	No knowledge related to this competency is applicable at this level.	Specific medication classes to be determined locally • Class names (S,S) • Class indications (S,S) • Class complications (S,S) • Class side effects (S,S) • Polypharmacy (S,S)	Specific medication classes to be determined locally • Class names (S,S) • Class indications (S,S) • Class complications (S,S) • Class side effects (S,S) • Polypharmacy (S,S)	Specific medication classes and examples to be determined locally • Class names (F,S) • Class indications (F,S) • Class complications (F,S) • Class side effects (F,S) • Polypharmacy (F,S)

		EMR	EMT	AEMT	Paramedic
Airway Management, Respiration and Ventilation	**Airway Management, Respiration and Ventilation**	**Applies knowledge of anatomy and physiology to assure a patent airway, adequate mechanical ventilation and respiration while awaiting additional EMS response for patients of all ages.**	**Applies knowledge of anatomy and physiology to patient assessment and management in order to assure a patent airway, adequate mechanical ventilation and respiration for patients of all ages.**	**Applies knowledge of upper airway anatomy and physiology to patient assessment and management in order to assure a patent airway, adequate mechanical ventilation and respiration for patients of all ages.**	**Integrates knowledge of anatomy, physiology and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patent airway, adequate mechanical ventilation and respiration for patients of all ages.**
	Airway Management (Include age-related variations in pediatric and geriatric patients)	• Airway anatomy (F,S) • Airway assessment (F,S) • Techniques of assuring a patent airway (F,S)	• Airway anatomy (F,F) • Airway assessment (F,F) • Techniques of assuring a patent airway (F,F)	• Airway anatomy (F,F) • Airway assessment (F,F) • Techniques of assuring a patent airway (F,F)	• Airway anatomy (C,C) • Airway assessment (C,C) • Techniques of assuring a patent airway (C,C)
	Respiration (Include age-related variations in pediatric and geriatric patients)	• Anatomy of the respiratory system (F,S) • Physiology and pathophysiology of respiration (F,S) - Pulmonary ventilation - Oxygenation - Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (F,S) • Supplemental oxygen therapy (F,S)	• Anatomy of the respiratory system (F,F) • Physiology and pathophysiology of respiration (F,C) - Pulmonary ventilation - Oxygenation - Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (F,C) • Supplemental oxygen therapy (F,C)	• Anatomy of the respiratory system (C,F) • Physiology and pathophysiology of respiration (F,C) - Pulmonary ventilation - Oxygenation - Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (F,C) • Supplemental oxygen therapy (F,C)	• Anatomy of the respiratory system (C,C) • Physiology and pathophysiology of respiration (C,C) - Pulmonary ventilation - Oxygenation - Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (C,C) • Supplemental oxygen therapy (C,C)
	Ventilation (Include age-related variations in pediatric and geriatric patients)	• Assessment and management of adequate and inadequate ventilation (F,S) • Effect of ventilation on cardiac output (F,S)	• Assessment and management of adequate and inadequate ventilation (F,F) • Effect of ventilation on cardiac output (F,F)	• Assessment and management of adequate and inadequate ventilation (C,F) • Effect of ventilation on cardiac output (C,F)	• Assessment and management of adequate and inadequate ventilation (C,C) • Effect of ventilation on cardiac output (C,C)

		EMR	EMT	AEMT	Paramedic
Assessment	**Assessment**	**Use scene information and patient assessment findings to identify and manage immediate life threats and injuries within the scope of practice of the EMR.**	**Applies scene information and patient assessment findings (scene size up, primary and secondary assessment, patient history and reassessment) to guide emergency management.**	**Same as EMT Level**	**Integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. This includes developing a list of differential diagnoses through clinical reasoning to modify the assessment and formulate a treatment plan.**
	Scene Assessment	• Scene safety/situational awareness (C,C) • Scene management (F,F) • Impact of the environment on patient care (F,F) • Addressing hazards (F,F) • Violence (F,F) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (F,F)	• Scene safety/situational awareness (C,C) • Scene management (F,F) • Impact of the environment on patient care (F,F) • Addressing hazards (F,F) • Violence (F,F) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (F,F)	• Scene safety/situational awareness (C,C) • Scene management (F,F) • Impact of the environment on patient care (F,F) • Addressing hazards (F,F) • Violence (F,F) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (F,F)	• Scene safety/situational awareness (C,C) • Scene management (C,C) • Impact of the environment on patient care (C,C) • Addressing hazards (C,C) • Violence (C,C) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (C,C)
	Primary Assessment (Include age-related variations in pediatric and geriatric patients)	• Primary assessment (S,S) • Begin interventions needed to preserve life (S,S)	• Primary assessment (F,S) • Integration of treatment/procedures needed to preserve life (F,S)	• Primary assessment (F,F) • Integration of treatment/procedures needed to preserve life (F,F)	• Primary assessment (C,C) • Integration of treatment/procedures needed to preserve life (C,C)

		EMR	EMT	AEMT	Paramedic
Assessment	History Taking (Include age-related variations in pediatric and geriatric patients)	• Determining the chief complaint (S,S) • Mechanism of injury/ nature of illness (S,S) • Associated signs and symptoms (S,S)	• Investigation of the chief complaint (F,F) • Mechanism of injury/nature of illness (F,F) • Associated signs and symptoms (F,F) • Past medical history (F,F) • Pertinent negatives (F,F)	• Investigation of the chief complaint (F,F) • Mechanism of injury/nature of illness (F,F) • Associated signs and symptoms (F,F) • Past medical history (F,F) • Pertinent negatives (F,F)	• Investigation of the chief complaint (C,C) • Mechanism of injury/nature of illness (C,C) • Associated signs and symptoms (C,C) • Past medical history (C,C) • Pertinent negatives (C,C) • Interviewing techniques (C,C) • Therapeutic communication and adaptive interview techniques (C,C)
	Secondary Assessment (Include age-related variations in pediatric and geriatric patients)	• Assessment of vital signs (S,S) • Assessment of pain (S,S) • Performing a rapid full body scan (S,S)	• Assessment of vital signs (F,F) • Assessment of pain (F,F) • Techniques of physical examination (F,F) - Respiratory system including breath sound quality - Cardiovascular system - Neurological system - Musculoskeletal system - Major anatomical regions	• Assessment of vital signs (C,F) • Assessment of pain (C,F) • Techniques of physical examination (C,F) - Respiratory system including breath sound quality - Cardiovascular system - Neurological system - Musculoskeletal system - Major anatomical regions	• Assessment of vital signs (C,C) • Assessment of pain (C,C) • Techniques of physical examination (C,C) - Respiratory system including breath sound quality - Cardiovascular system - Neurological system - Musculoskeletal system - Major anatomical regions
	Monitoring Devices	No knowledge related to this competency is applicable at this level.	• Pulse oximetry (S,S) • Non-invasive blood pressure (S,S) • Cardiac monitoring – 12 lead ECG acquisition and transmission (S,S) • Blood glucose determination (S,S)	• Pulse oximetry (S,S) • Non-invasive blood pressure (S,S) • Cardiac monitoring – 12 lead ECG acquisition and transmission (S,S) • Blood glucose determination (S,S) • End tidal CO_2 monitoring and interpretation of waveform capnography (S,S) • Venous blood sampling (S,S)	• Pulse oximetry (S,S) • Non-invasive blood pressure (S,S) • Cardiac monitoring – 12 lead ECG acquisition and transmission (F,F) • Blood glucose determination (S,S) • End tidal CO_2 monitoring and interpretation of waveform capnography (F,F) • Venous blood sampling (S,S) • 12-lead ECG interpretation (F,F) • Blood chemistry analysis (F,F)
	Reassessment (Include age-related variations in pediatric and geriatric patients)	• How and when to reassess patients (S,S)	• How and when to reassess patients (F,F)	• How and when to reassess patients (F,F)	• How and when to reassess patients (C,C)

		EMR	EMT	AEMT	Paramedic
Medicine	**Medicine**	**Recognizes and manages life threats based on assessment findings of a patient with a medical emergency while awaiting additional emergency response.**	**Applies knowledge to provide basic emergency care and transportation based on assessment findings for an acutely ill patient.**	**Applies knowledge to provide basic and selected advanced emergency care and transportation based on assessment findings for an acutely ill patient.**	**Integrates assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a treatment/ disposition plan for a patient with a medical complaint.**
Medicine	Medical Overview (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Assessment and management of a medical complaint (S,S)	• Pathophysiology, assessment, and management of a medical complaints to include (S,F) - Transport mode - Destination decisions	• Pathophysiology, assessment, and management of a medical complaints to include (F,F) - Transport mode - Destination decisions	• Pathophysiology, assessment, and management of a medical complaints to include (C,C) - Transport mode - Destination decisions
Medicine	Abdominal and Gastrointestinal Disorders (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Anatomy, presentations and management of shock associated with gastrointestinal bleeding (S,S)	• Acute and chronic gastrointestinal hemorrhage (F,F) • Other gastrointestinal disorders to be determined locally (S,S)	• Acute and chronic gastrointestinal hemorrhage (F,F) • Other gastrointestinal disorders to be determined locally (S,S)	• Acute and chronic gastrointestinal hemorrhage (C,C) • Bowel obstruction (C,C) • Liver and biliary tract disorders (F,F) • Pancreatitis (S,S) • Inflammatory disorders (S,S) • Peritonitis (S,S) • Other gastrointestinal disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	**Cardiovascular** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Chest pain (S,S)	• Acute coronary syndrome (F,F) • Hypertensive emergencies (S,S) • Aortic aneurysm/dissection (F,F) • Thromboembolism (F,F) • Heart failure (F,F) • Other cardiovascular disorders to be determined locally (S,S)	• Acute coronary syndrome (C,F) • Hypertensive emergencies (F,S) • Aortic aneurysm/dissection (F,F) • Thromboembolism (F,F) • Heart failure (F,F) • Other cardiovascular disorders to be determined locally (S,S)	• Acute coronary syndrome (C,C) • Hypertensive emergencies (C,C) • Aortic aneurysm/dissection (F,F) • Thromboembolism (F,F) • Heart failure (C,C) • Non-traumatic cardiac tamponade (C,C) • Cardiogenic shock (C,C) • Vascular disorders (C,C) • Cardiac rhythms (C,C) • Conditions that predispose patients to cardiac rhythm disturbances including WPW, Brugada, long QT syndrome and others (C,C) • Infectious diseases of the heart: endocarditis, myocarditis, pericarditis (F,F) • Congenital heart disease (F,F) • Hypertrophic cardiomyopathy (F,F) • Other cardiovascular disorders to be determined locally (S,S)
	Disorders of the Eyes, Ears, Nose, and Throat (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Epistaxis (S,S)	• Epistaxis (S,S) • Other eye, ear, nose and throat disorders to be determined locally (S,S)	• Epistaxis (F,F) • Post-surgical oropharyngeal hemorrhage (F,F) • Other eye, ear, nose and throat disorders to be determined locally (S,S)	• Epistaxis (F,F) • Post-surgical oropharyngeal hemorrhage (F,F) • Common or major diseases of the eyes, ears, nose and throat (F,F) • Other eye, ear, nose and throat disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	**Endocrine Disorders** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Awareness that diabetic emergencies cause altered mental status (S,S)	• Diabetic emergencies (F,F) • Other endocrine disorders to be determined locally (S,S)	• Diabetic emergencies (C,F) • Other endocrine disorders to be determined locally (S,S)	• Diabetic emergencies (C,C) • Chronic diabetes (C,C) • Adrenal disease (S,S) • Pituitary and thyroid disorders (S,S) • Inborn errors of metabolism (S,S) • Other endocrine disorders to be determined locally (S,S)
	Genitourinary/Renal (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Blood pressure assessment in hemodialysis patients (S,S)	• Complications related to renal dialysis (S,S) • Complications related to urinary catheter management (not insertion) (S,S) • Kidney stones (S,S) • Sexual assault (Female and Male) (F,F) • Other GI/Renal to be determined locally (S,S)	• Complications related to renal dialysis (F,S) • Complications related to urinary catheter management (not insertion) (S,S) • Kidney stones (F,S) • Sexual assault (Female and Male) (F,F) • Other GI/Renal to be determined locally (S,S)	• Complications of dialysis (C,C) • Complications related to urinary catheter management (not insertion) (S,S) • Renal calculi (C,C) • Sexual assault (Female and Male) (C,C) • Acute/chronic renal failure (C,C) • Acid base disturbances (C,C) • Fluid and electrolytes (C,C) • Infection (F,F) • Male genital tract conditions (F,F) • Other GI/Renal to be determined locally (S,S)
	Hematology (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	No knowledge related to this competency is applicable at this level.	• Sickle cell crisis (S,S) • Clotting disorders (S,S) • Other hematologic disorders to be determined locally (S,S)	• Sickle cell crisis (F,F) • Clotting disorders (S,S) • Other hematologic disorders to be determined locally (S,S)	• Sickle cell disease (C,C) • Coagulopathies (F,F) • Blood transfusion complications (F,F) • Hemostatic disorders (F,F) • Red blood cell disorders (F,F) • White blood cell disorders (F,F) • Other hematologic disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	**Immunology** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Anaphylactic reactions (S,S)	• Allergic and anaphylactic reactions (F,F) • Other immunological disorders to be determined locally (S,S)	• Allergic and anaphylactic reactions (C,C) • Systemic Inflammatory Response Syndrome (SIRS) (C,C) • Other immunological disorders to be determined locally (S,S)	• Allergic and anaphylactic reactions (C,C) • Systemic Inflammatory Response Syndrome (SIRS) (C,C) • Hypersensitivity (C,C) • Anaphylactoid reactions (C,C) • Collagen vascular disease (F,F) • Transplant-related problems (F,F) • Immunodeficiency syndromes (acquired or congenital) (F,F) • Other immunological disorders to be determined locally (S,S)
	Infectious Diseases (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Awareness of patient who may have an infectious disease (S,S) • How to disinfect and decontaminate equipment after treating a patient (S,S)	• Assessment and management of a patient who may have an infectious disease (S,S) • How to decontaminate the ambulance and equipment after treating a patient (S,S) • Sepsis and septic shock (S,S) • Other infectious diseases to be determined locally (S,S)	• Assessment and management of a patient who may have an infectious disease (S,S) • How to decontaminate the ambulance and equipment after treating a patient (S,S) • Sepsis and septic shock (F,F) • HIV (F,F) • Hepatitis B (F,F) • Antibiotic resistance (F,F) • Current infectious diseases prevalent in the community (F,F) • Vaccine-preventable diseases (F,F) • Other infectious diseases to be determined locally (S,S)	• Assessment and management of a patient who may have an infectious disease (S,S) • How to decontaminate the ambulance and equipment after treating a patient (S,S) • Sepsis and septic shock (C,C) • HIV-related disease (C,C) • Hepatitis (C,C) • Meningitis (C,C) • Antibiotic resistance (F,F) • Current infectious diseases prevalent in the community (F,F) • Vaccine-preventable diseases (C,C) • Viral diseases: RSV, Herpes zoster (F,F) • Sexually transmitted infections (F,F) • Tetanus (S,S) • Vector-borne diseases (S,S) • Tuberculosis (S,S) • Emerging infectious disease (S,S) • Other infectious diseases to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	**Neurology** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Decreased level of responsiveness (S,S) • Seizure (S,S) • Stroke (S,S)	• Decreased level of responsiveness (S,S) • Seizure (F,F) • Stroke (F,F) • Dementia vs. delirium (S,S) • Alzheimer's disease (S,S) • Headache (F,F) • Brief Resolved Unexplained Event (BRUE) (F,F) • Other neurological disorders to be determined locally (S,S)	• Decreased level of responsiveness (F,F) • Seizure (C,F) • Stroke (F,F) • Dementia vs. delirium (S,S) • Alzheimer's disease (S,S) • Headache (F,F) • Brief Resolved Unexplained Event (BRUE) (F,F) • Parkinson's disease (S,S) • Other neurological disorders to be determined locally (S,S)	• Decreased level of responsiveness (C,C) • Seizure (C,C) • Stroke (C,C) • Dementia vs. delirium (S,S) • Alzheimer's disease (S,S) • Headache (C,C) • Brief Resolved Unexplained Event (BRUE) (F,F) • Parkinson's disease (S,S) • Hydrocephalus – CSF diversion devices or shunts (F,F) • Other neurological disorders to be determined locally (S,S)
	Non-Traumatic Musculoskeletal Disorders (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Non-traumatic fractures (S,S)	• Non-traumatic fractures (F,F) • Other non-traumatic musculoskeletal disorders to be determined locally (S,S)	• Non-traumatic fractures (F,F) • Other non-traumatic musculoskeletal disorders to be determined locally (S,S)	• Non-traumatic fractures (F,F) • Disorders of the spine (F,F) • Joint abnormalities (F,F) • Muscle abnormalities (F,F) • Overuse syndromes (F,F) • Rhabdomyolysis (F,F) • Other non-traumatic musculoskeletal disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	Psychiatric or Behavioral Emergencies (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Recognition of behaviors that pose a risk to the EMR, patient or others • Recognition of suicide risk	• Basic principles of the mental health system (S,S) • Patterns of violence, abuse and neglect (S,S) • Acute psychosis (F,F) • Suicide ideation (F,F) • Excited delirium (F,F) • Anxiety (F,F) • Depression (F,F) • Medical fear (F,F) • Substance use disorder (F,F) • PTSD (F,F) • Other psychiatric/behavioral disorders to be determined locally (S,S)	• Basic principles of the mental health system (S,S) • Patterns of violence, abuse and neglect (F,F) • Acute psychosis (F,F) • Suicide ideation (C,C) • Excited delirium (F,F) • Anxiety (F,F) • Depression (F,F) • Medical fear (F,F) • Substance use disorder/ addictive behavior (C,C) • PTSD (F,F) • Other psychiatric/behavioral disorders to be determined locally (S,S)	• Basic principles of the mental health system (S,S) • Patterns of violence, abuse and neglect (C,C) • Suicide ideation (C,C) • Excited delirium (C,C) • Anxiety (C,C) • Depression (C,C) • Medical fear (F,F) • Substance use disorder/ addictive behavior (C,C) • PTSD (C,C) • Acute psychosis (C,C) • Cognitive disorders (F,F) • Thought disorders (F,F) • Mood disorders (F,F) • Neurotic disorders (F,F) • Somatoform disorders (F,F) • Factitious disorders (F,F) • Personality disorders (F,F) • Other psychiatric/behavior disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	**Respiratory** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Respiratory distress/failure/arrest (F,F) • Upper airway obstruction (S,S) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD) (S,S)	• Respiratory distress/failure/arrest (F,F) • Upper airway obstruction (F,F) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD) (F,F) • Spontaneous pneumothorax (F,F) • Pulmonary edema (F,F) • Other respiratory disorders to be determined locally (S,S)	• Respiratory distress/failure/arrest (F,F) • Upper airway diseases: foreign body, croup, epiglottitis (C,F) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD) (C,F) • Spontaneous pneumothorax (F,F) • Pulmonary edema (C,F) • Other respiratory disorders to be determined locally (S,S)	• Respiratory distress/failure/arrest (F,F) • Upper airway diseases: foreign body, croup, epiglottitis (C,C) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD), bronchopulmonary dysplasia (C,C) • Spontaneous pneumothorax (C,C) • Pulmonary edema (C,C) • Other respiratory disorders to be determined locally (S,S)

	Toxicology
	(Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)
		• Carbon monoxide poisoning (S,S)
		• Nerve agent poisoning (S,S)
		• Opioid toxicity (S,S)
		• How and when to contact a poison control center (S,S)
			• Carbon monoxide poisoning (S,S)
			• Nerve agent poisoning (S,S)
			• Opioid toxicity (S,S)
			• How and when to contact a poison control center (S,S)
			• Poisons (inhaled, ingested, injected, absorbed) (F,F)
			• Alcohol intoxication and withdrawal (F,F)
			• Other toxicological disorders to be determined locally (S,S)
				• Carbon monoxide poisoning (S,S)
				• Nerve agent poisoning (S,S)
				• Opioid toxicity (F,F)
				• How and when to contact a poison control center (S,S)
				• Poisons (inhaled, ingested, injected, absorbed) (F,F)
				• Alcohol intoxication and withdrawal (F,F)
				• Other toxicological disorders to be determined locally (S,S)
					• Carbon monoxide poisoning (C,C)
					• Nerve agent poisoning (S,S)
					• Opioid toxicity (F,F)
					• How and when to contact a poison control center (S,S)
					• Poisons (inhaled, ingested, injected, absorbed) (F,F)
					• Alcohol intoxication and withdrawal (C,C)
					• Toxidromes (C,C)
					  - Cholinergic
					  - Anticholinergic
					  - Sympathomimetic
					  - Sedative/hypnotics
					  - Opioid
					  - Corrosive
					  - Knockdown
					• Chronic or maintenance medications (C,C)
					• Drugs of abuse (C,C)
					• Non-FDA approved medications and supplements (C,C)
					• Serotonin Syndrome (C,C)
					• Malignant Hyperthermia (C,C)
					• Other toxicological disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Shock and Resuscitation	**Shock and Resuscitation**	**Uses assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based on assessment findings and manages the emergency while awaiting additional emergency response.**	**Applies knowledge of the causes, pathophysiology and management of shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts and post resuscitation management.**	**Applies knowledge to provide basic and selected advanced emergency care and transportation based on assessment findings for a patient in shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts and post resuscitation management.**	**Integrates knowledge of causes and pathophysiology into the management of cardiac arrest and peri-arrest states.**
	Shock (Include psychosocial aspects of age-related assessment and treatment modifications for pediatric and geriatric patients)	• Definition (S,S) • Physiologic response (S,S)	• Essential components in normal perfusion (F,S) • Physiologic response (S,S) • Types of shock (S,S) • Treatment of shock (S,S)	• Essential components in normal perfusion (F,F) • Physiologic response (F,F) • Types of shock (F,F) • Treatment of shock, hypoperfusion and dehydration (C,C) • Complications of shock (F,F) • Circulatory assist devices (F,F)	• Essential components in normal perfusion (C,C) • Physiologic response (C,C) • Types of shock (C,C) • Treatment of shock, hypoperfusion and dehydration (C,C) • Complications of shock (C,C) • Circulatory assist devices (C,C)
	Resuscitation from Cardiac Arrest (Include psychosocial aspects of age-related assessment and treatment modifications for pediatric and geriatric patients)	• Ethical issues in resuscitation (S,S) • CPR physiology (S,S) • Resuscitation system components (S,S) • Special arrest and peri-arrest situations (S,S)	• Ethical issues in resuscitation (C,C) • CPR physiology (F,F) • Resuscitation system components (F,F) • Special arrest and peri-arrest situations (F,F) • Postresuscitation support (F,F) • Termination of resuscitation (F,F)	• Ethical issues in resuscitation (C,C) • CPR physiology (F,F) • Resuscitation system components (F,F) • Special arrest and peri-arrest situations (F,F) • Postresuscitation support (C,C) • Termination of resuscitation (C,C)	• Ethical issues in resuscitation (C,C) • CPR physiology (C,C) • Resuscitation system components (C,C) • Special arrest and peri-arrest situations (C,C) • Postresuscitation support (C,C) • Termination of resuscitation (C,C) • Premorbid conditions (C,C)

		EMR	EMT	AEMT	Paramedic
Trauma	**Trauma**	**Uses assessment information to recognize shock, respiratory failure or arrest and cardiac arrest based on assessment findings and manages the emergency while awaiting additional emergency response.**	**Applies knowledge of the causes, pathophysiology and management of shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts and post resuscitation management.**	**Applies knowledge to provide basic and selected advanced emergency care and transportation based on assessment findings for a patient in shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts and post resuscitation management.**	**Integrates knowledge of causes and pathophysiology into the management of cardiac arrest and peri-arrest states.**
	Trauma Overview (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	No knowledge related to this competency is applicable at this level.	• Trauma scoring (F,F) • Transport and destination issues (F,F) • Transport mode (F,F)	• Trauma scoring (F,F) • Transport and destination issues (F,F) • Transport mode (F,F)	• Trauma scoring (C,C) • Transport and destination issues (C,C) • Transport mode (F,F)
	Abdominal and Genitourinary Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Blunt versus penetrating mechanisms (S,S) • Evisceration (S,S) • Impaled object (S,S)	• Blunt versus penetrating mechanisms (F,S) • Evisceration (S,S) • Impaled object (S,S) • Solid and hollow organ injuries (F,S) • Injuries to the internal or external genitalia (F,S)	• Blunt versus penetrating mechanisms (F,F) • Evisceration (S,S) • Impaled object (S,S) • Solid and hollow organ injuries (F,F) • Injuries to the internal or external genitalia (F,F) • Vascular injury (F,F) • Retroperitoneal injuries (F,F)	• Blunt versus penetrating mechanisms (F,F) • Evisceration (S,S) • Impaled object (S,S) • Solid and hollow organ injuries (F,F) • Injuries to the internal or external genitalia (F,F) • Vascular injury (F,F) • Retroperitoneal injuries (F,F)
	Bleeding (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Bleeding (S,S)	• Bleeding (F,F)	• Bleeding (F,F) • Fluid resuscitation (C,C)	• Bleeding (F,F) • Fluid resuscitation (C,C)

		EMR	EMT	AEMT	Paramedic
Trauma	**Chest Trauma** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Blunt versus penetrating mechanisms (S,S) • Open chest wound (S,S) • Impaled object (S,S)	• Blunt versus penetrating mechanisms (F,S) • Open chest wound (S,S) • Impaled object (S,S) • Hemothorax (F,S) • Pneumothorax (F,S) • Cardiac tamponade (F,S) • Rib fractures (F,S) • Flail chest (F,S) • Commotio cordis (F,S)	• Blunt versus penetrating mechanisms (F,S) • Open chest wound (S,S) • Impaled object (S,S) • Hemothorax (F,F) • Pneumothorax (F,F) • Cardiac tamponade (F,F) • Rib fractures (F,F) • Flail chest (F,F) • Commotio cordis (F,S) • Traumatic aortic disruption (F,F) • Pulmonary contusion (F,F) • Blunt cardiac injury (F,F) • Traumatic asphyxia (F,F)	• Blunt versus penetrating mechanisms (F,S) • Open chest wound (S,S) • Impaled object (S,S) • Hemothorax (C,C) • Pneumothorax (C,C) • Cardiac tamponade (C,C) • Rib fractures (C,C) • Flail chest (C,C) • Commotio cordis (F,S) • Traumatic aortic disruption (C,C) • Pulmonary contusion (C,C) • Blunt cardiac injury (C,C) • Traumatic asphyxia (C,C) • Tracheobronchial disruption (C,C) • Diaphragmatic rupture (C,C)
	Environmental Emergencies (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Drowning (S,S) • Temperature-related illness (S,S) • Bites and envenomations (S,S) • Lightning injury (S,S) • Other environmental emergencies to be determined locally (S,S)	• Drowning (F,F) • Temperature-related illness (F,F) • Bites and envenomations (F,F) • Lightning injury (F,F) • Other environmental emergencies to be determined locally (S,S)	• Drowning (F,F) • Temperature-related illness (F,F) • Bites and envenomations (F,F) • Lightning injury (F,F) • Other environmental emergencies to be determined locally (S,S)	• Drowning (C,C) • Temperature-related illness (C,C) • Bites and envenomations (C,C) • Lightning injury (C,C) • Other environmental emergencies to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Trauma	**Head, Facial, Neck, and Spine Trauma** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Life threats (S,S) • Spine trauma (S,S)	• Life threats (S,S) • Spine trauma (F,F) • Penetrating neck trauma (F,F) • Laryngotracheal injuries (F,F) • Shaken Baby Syndrome (F,F) • Facial fractures (S,S) • Skull fractures (S,S) • Foreign bodies in the eyes (S,S) • Globe rupture (S,S) • Dental trauma (S,S) • Severe epistaxis (S,S)	• Life threats (S,S) • Spine trauma (F,F) • Penetrating neck trauma (F,F) • Laryngotracheal injuries (C,F) • Shaken Baby Syndrome (F,F) • Facial fractures (C,F) • Skull fractures (S,S) • Foreign bodies in the eyes (S,S) • Globe rupture (S,S) • Dental trauma (S,S) • Severe epistaxis (S,S)	• Life threats (S,S) • Spine trauma (C,C) • Penetrating neck trauma (C,C) • Laryngotracheal injuries (C,C) • Shaken Baby Syndrome (F,F) • Facial fractures (C,F) • Skull fractures (C,C) • Foreign bodies in the eyes (S,S) • Globe rupture (S,S) • Dental trauma (S,S) • Severe epistaxis (S,S) • Unstable facial fractures (F,F) • Orbital fractures (F,F) • Perforated tympanic membrane (F,F) • Mandibular fractures (C,C)
	Multi-System Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Multi-system trauma (S,S)	• Multi-system trauma (F,F) • Blast injuries (F,F)	• Multi-system trauma (C,F) • Blast injuries (F,F)	• Multi-system trauma (C,C) • Blast injuries (C,C)
	Nervous System Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Traumatic brain injury (S,S)	• Traumatic brain injury (F,F) • Spinal cord injury (F,F)	• Traumatic brain injury (C,F) • Spinal cord injury (F,F)	• Traumatic brain injury (C,C) • Spinal cord injury (C,C) • Spinal shock (C,C) • Cauda equina syndrome (F,F) • Nerve root injury (F,F) • Peripheral nerve injury (F,F)

		EMR	EMT	AEMT	Paramedic
Trauma	**Orthopedic Trauma** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Open fractures (S,S) • Closed fractures (S,S) • Dislocations (S,S) • Amputations (S,S)	• Open fractures (F,F) • Closed fractures (F,F) • Dislocations (F,F) • Amputations/replantation (F,F) • Upper and lower extremity orthopedic trauma (F,F) • Sprains/strains (F,F) • Pelvic fractures (F,F)	• Open fractures (F,F) • Closed fractures (F,F) • Dislocations (F,F) • Amputations/replantation (C,F) • Upper and lower extremity orthopedic trauma (F,F) • Sprains/strains (F,F) • Pelvic fractures (C,F)	• Open fractures (C,C) • Closed fractures (C,C) • Dislocations (C,C) • Amputations/replantation (C,F) • Upper and lower extremity orthopedic trauma (C,C) • Sprains/strains (F,F) • Pelvic fractures (C,F) • Pediatric fractures (F,F) • Tendon laceration/ transection/ rupture (Achilles and patellar) (F,F)
	Soft Tissue Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Wounds (avulsion, bite, laceration, puncture, incision) (S,S) • Burns (electrical, chemical, thermal) including inhalation injury (S,S) • Chemicals in the eye and on the skin (S,S)	• Wounds (avulsion, bite, laceration, puncture, incision) (F,F) • Burns (electrical, chemical, thermal, radiation) including inhalation injury (F,F) • Chemicals in the eye and on the skin (S,S) • Crush/compartment syndrome (S,S) • High-pressure injection injury (S,S)	• Wounds (avulsion, bite, laceration, puncture, incision) (F,F) • Burns (electrical, chemical, thermal, radiation) including inhalation injury (F,F) • Chemicals in the eye and on the skin (S,S) • Crush/compartment syndrome (F,S) • High-pressure injection injury (S,S)	• Wounds (avulsion, bite, laceration, puncture, incision) (C,C) • Burns (electrical, chemical, thermal, radiation) including inhalation injury (C,C) • Chemicals in the eye and on the skin (S,S) • Crush/compartment syndrome (C,C) • High-pressure injection injury (S,S)
	Special Considerations in Trauma	• Pregnant patient (S,S) • Pediatric patient (S,S) • Geriatric patient (S,S)	• Pregnant patient (F,F) • Pediatric patient (F,F) • Geriatric patient (F,F) • Cognitively impaired patient (F,F)	• Pregnant patient (C,F) • Pediatric patient (C,F) • Geriatric patient (C,F) • Cognitively impaired patient (C,F)	• Pregnant patient (C,C) • Pediatric patient (C,C) • Geriatric patient (C,C) • Cognitively impaired patient (C,C)

Special Patient Populations	EMR	EMT	AEMT	Paramedic
Special Patient Populations	**Recognizes and manages life threats based on simple assessment findings for a patient with special needs while awaiting additional emergency response.**	**Applies knowledge of growth, development and aging and assessment findings to provide basic emergency care and transportation for a patient with special needs.**	**Applies knowledge of growth, development and aging and assessment findings to provide basic and selected advanced emergency care and transportation for a patient with special needs.**	**Integrates assessment findings with principles of pathophysiology and knowledge of psychosocial needs to formulate a field impression and implement a treatment/disposition plan for patients with special needs.**
Gynecology (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Shock associated with vaginal bleeding (S,S)	• Vaginal bleeding (F,F) • Infections (S,S) • Other gynecological disorders to be determined locally (S,S)	• Vaginal bleeding (F,F) • Infections (S,S) • Other gynecological disorders to be determined locally (S,S)	• Vaginal bleeding (C,C) • Infections (F,F) • Ovarian emergencies (F,F) • Vaginal foreign body (F,F) • Other gynecological disorders to be determined locally (S,S)
Obstetrics	• Normal delivery (S,S) • Vaginal bleeding in the pregnant patient (S,S)	• Normal delivery (F,F) • Vaginal bleeding in the pregnant patient (S,S) • Normal pregnancy (anatomy and physiology) (F,F) • Pathophysiology of complications of pregnancy (F,F) • Assessment of the pregnant patient (F,F) • Abnormal delivery (nuchal cord, prolapsed cord, breech, shoulder dystocia, prematurity, multiparity) (F,F) • Third trimester and antepartum bleeding (placenta previa. placental abruption) (F,F) • Spontaneous abortion/ miscarriage (F,F) • Ectopic pregnancy (F,F) • Preeclampsia/eclampsia (F,F) • Postpartum complications (S,S)	• Normal delivery (F,F) • Vaginal bleeding in the pregnant patient (S,S) • Normal pregnancy (anatomy and physiology) (F,F) • Pathophysiology of complications of pregnancy (F,F) • Assessment of the pregnant patient (F,F) • Abnormal delivery (nuchal cord, prolapsed cord, breech, shoulder dystocia, prematurity, multiparity) (F,F) • Third trimester and antepartum bleeding (placenta previa. placental abruption) (F,F) • Spontaneous abortion/miscarriage (F,F) • Ectopic pregnancy (F,F) • Preeclampsia/eclampsia (F,F) • Postpartum complications (C,C)	• Normal delivery (C,C) • Vaginal bleeding in the pregnant patient (S,S) • Normal pregnancy (anatomy and physiology) (C,C) • Pathophysiology of complications of pregnancy (C,C) • Assessment of the pregnant patient (C,C) • Abnormal delivery (nuchal cord, prolapsed cord, breech, shoulder dystocia, prematurity, multiparity) (C,C) • Third trimester and antepartum bleeding (placenta previa. placental abruption) (F,F) • Spontaneous abortion/miscarriage (C,C) • Ectopic pregnancy (C,C) • Preeclampsia/eclampsia (C,C) • Postpartum complications (C,C) • High-risk pregnancy (C,C) • Complications of labor (fetal distress, premature rupture of membranes, rupture of uterus) (C,C) • Hyperemesis gravidarum (S,S) • Postpartum depression (S,S)

		EMR	EMT	AEMT	Paramedic
Special Patient Populations	Neonatal Care	• Newborn stabilization (S,S) • Neonatal resuscitation (S,S)	• Newborn stabilization (F,F) • Neonatal resuscitation (F,F)	• Newborn stabilization (F,F) • Neonatal resuscitation (F,F)	• Newborn stabilization (C,C) • Neonatal resuscitation (C,C) • Anatomy and physiology of neonatal circulation (C,C)
	Pediatrics	The Education Standards now integrate assessment, diagnostic, treatment and disposition modifications for pediatric-specific diseases and emergencies into each section of the document.			
	Geriatrics	The Education Standards now integrate assessment, diagnostic, treatment and disposition modifications for geriatric-specific diseases and emergencies into each section of the document			
	Patients with Special Challenges	• Recognizing and reporting abuse and neglect (S,S)	• Recognizing and reporting abuse and neglect (S,S) • Abuse/Intimate partner violence (S,S) • Neglect (S,S) • Child/dependent adult maltreatment (S,S) • Homelessness (S,S) • Poverty (S,S) • Bariatrics (S,S) • Technology dependent (locally determined) (S,S) • Hospice/ terminally ill (S,S) • Tracheostomy care/dysfunction (S,S) • Homecare (S,S) • Sensory deficit/loss (S,S) • Developmental disability (S,S) • Autism Spectrum Disorder (S,S) • Orthotics/prosthetics (S,S)	• Recognizing and reporting abuse and neglect (S,S) • Abuse/Intimate partner violence (F,F) • Neglect (F,F) • Child/dependent adult maltreatment (F,F) • Homelessness (F,F) • Poverty (F,F) • Bariatrics (F,F) • Technology dependent (locally determined) (F,F) • Hospice/ terminally ill (F,F) • Tracheostomy care/dysfunction (F,F) • Homecare (F,F) • Sensory deficit/loss (F,F) • Developmental disability (F,F) • Autism Spectrum Disorder (F,F) • Orthotics/prosthetics (S,S)	• Recognizing and reporting abuse and neglect (S,S) • Abuse/Intimate partner violence (C,C) • Neglect (C,C) • Child/dependent adult maltreatment (C,C) • Homelessness (F,F) • Poverty (C,C) • Bariatrics (C,C) • Technology dependent (vagal nerve stimulators, CSF diversion devices or shunts, VAD, pacemakers, gastric tubes and others to be locally determined) (C,C) • Hospice/ terminally ill (C,C) • Tracheostomy care/dysfunction (C,C) • Homecare (F,F) • Sensory deficit/loss (F,F) • Developmental disability (F,F) • Autism Spectrum Disorder (F,F) • Orthotics/prosthetics (S,S)

		EMR	EMT	AEMT	Paramedic
EMS Operations	**EMS Operations**	**Knowledge of operational roles and responsibilities to ensure patient, public and personnel safety**	**Same as EMR Level**	**Same as EMR Level**	**Same as EMR Level**
	Emergency Response Vehicles	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S)	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S) • Pediatric transport considerations (F,F) • Risks and responsibilities of transport (F,F)	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S) • Pediatric transport considerations (F,F) • Risks and responsibilities of transport (F,F)	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S) • Pediatric transport considerations (F,F) • Risks and responsibilities of transport (F,F)
	Incident Management (The extent of information presented in this area will vary at the regional and local level.)	• Establish and work within the incident management system (S,S)	• Establish and work within the incident management system (F,F) • Understand the principles of Crew Resource Management (F,F)	• Establish and work within the incident management system (F,F) • Understand the principles of Crew Resource Management (F,F)	• Establish and work within the incident management system (F,F) • Understand the principles of Crew Resource Management (F,F)
	Multiple Casualty Incidents (The extent of information presented in this area will vary at the regional and local level.)	• Operational goals (F,F) • Field triage (F,F)	• Operational goals (F,F) • Field triage (F,F) • Destination determination (F,F) • Treatment principles (F,F)	• Operational goals (F,F) • Field triage (F,F) • Destination determination (F,F) • Treatment principles (F,F)	• Operational goals (F,F) • Field triage (F,F) • Destination determination (F,F) • Treatment principles (F,F)
	Air Medical (The extent of information presented in this area will vary at the regional and local level.)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (S,S)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (F,F)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (F,F)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (F,F)

		EMR	EMT	AEMT	Paramedic
EMS Operations	Rescue Operations (The extent of information presented in this area will vary at the regional and local level.)	• Safety principles of rescue operations (S,S)	• Safety principles of rescue operations (S,S)	• Safety principles of rescue operations (S,S)	• Safety principles of rescue operations (S,S)
	Hazardous Materials (The extent of information presented in this area will vary at the regional and local level.)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)
	Mass Casualty Incidents due to Terrorism and Disaster (The extent of information presented in this area will vary at the regional and local level.)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)

Clinical Behavior/Judgment

	EMR	EMT	AEMT	Paramedic
Assessment	• Perform a simple assessment to identify life threats, identify injuries requiring spinal motion restriction and conditions requiring treatment within the scope of practice of the EMR:	• Perform a basic history and physical examination to identify acute complaints and monitor changes. • Formulate a field diagnosis based upon an actual and/or potential illness or injury.	• Perform a basic history and physical examination to identify acute complaints and monitor changes. • Formulate a field diagnosis based upon an actual and/or potential illness or injury.	• Perform a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient. • Relate assessment findings to underlying pathological and physiological changes in the patient's condition. • Integrate and synthesize the multiple determinants of health and clinical care. • Formulate a field diagnosis based on an analysis of comprehensive assessment findings, anatomy, physiology, pathophysiology and epidemiology. • Perform health screening and referrals.
Therapeutic Communication and Cultural Humility	• Effectively communicates in a non-discriminatory manner that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome.			
Psychomotor Skills	• Safely and effectively perform all psychomotor skills within the *National EMS Scope of Practice Model* AND state Scope of Practice at this level.			

Clinical Behavior/Judgment

	EMR	EMT	AEMT	Paramedic
Professionalism	Demonstrate professional affective domain behaviors including but not limited to: • Integrity • Empathy/compassion • Self-motivation • Appearance/personal hygiene • Self-confidence • Communications • Time management • Teamwork/diplomacy • Respect • Patient advocacy • Careful delivery of service • Lifelong learning			Is a role model of exemplary professional affective domain behaviors including but not limited to: • Integrity • Empathy/compassion • Self-motivation • Appearance/personal hygiene • Self-confidence • Communications • Time management • Teamwork/diplomacy • Respect • Patient advocacy • Careful delivery of service • Lifelong learning
Decision Making	• Initiates simple interventions based on assessment findings.	• Initiates interventions based on assessment findings intended to provide symptom relief (within the provider's scope of practice) while providing access to definitive care • Evaluates the effectiveness of interventions and modifies treatment plan accordingly.		• Performs interventions as part of a treatment plan intended to provide symptom relief and improve the overall health of the patient. • Evaluates the effectiveness of interventions and modifies treatment plan accordingly. • Evaluates decision making strategy for cognitive errors to enhance future critical thinking skills (metacognition)
Record Keeping	• Report and document assessment findings and interventions performed.	• Report and document assessment findings, interventions performed, and clinical decision making		
Team Dynamics	• Manage the scene until care is transferred to an EMS team member licensed at a higher level arrives.	• The entry-level clinician serves as a team member, while gaining the experience necessary to function as the team leader.		
Safety	• Ensure the safety of the rescuer, other public safety personnel, civilians and the patient.			

Educational Infrastructure

	EMR	EMT	AEMT[2]	Paramedic
Educational Facilities	• Facility sponsored or approved by sponsoring agency • Sponsoring agency commitment to diversity, equity and inclusion • ADA compliant facility • Sufficient space for class size • Controlled environment			Reference Committee on Accreditation for EMS Professions (CoAEMSP) Standards and Guidelines (www.coaemsp.org)[1]
Student Space	• Provide space sufficient for students to attend classroom sessions, take notes, and participate in classroom activities • Provide space for students to participate in kinematic learning and practice activities			
Instructional Resources	• Provide basic instructional support material • Provide audio, visual, and kinematic aids to support and supplement didactic instruction			
Instructor Preparation Resources	• Provide space for instructor preparation • Provide support equipment for instructor preparation			
Storage Space	• Provide adequate and secure storage space for instructional materials			

[1] *The National EMS Education Agenda for the Future*: A Systems Approach (2000) calls for national accreditation of Paramedic programs. The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). CAAHEP is the only national agency that offers Paramedic educational programmatic accreditation and is used or recognized by most states. Recognition of national accreditation remains the responsibility of each state.

[2] The 2019 and 2021 updated *National Scope of Practice Model* call for national accreditation of AEMT programs. The target for full implementation of AEMT program accreditation is January 1, 2025. Until that date, AEMT programs should reference the existing infrastructure suggestions within this document. The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).CAAHEP is the only national agency that offers EMS programmatic accreditation and is used or recognized by most states. Recognition of national accreditation remains the responsibility of each state.

Educational Infrastructure

	EMR	EMT	AEMT	Paramedic
Sponsorship	Sponsoring organizations shall be one of the following: • Accredited educational institution • Public safety organization • Accredited hospital, clinic or medical center, or • Other state approved institution or organization			Reference Committee on Accreditation for EMS Professions (CoAEMSP) Standards and Guidelines (www.coaemsp.org)[1]
Programmatic Approval	• Sponsoring organization shall have programmatic approval by authority having jurisdiction for program approval (state)			
Faculty	Course primary instructors should: • Be educated at a level higher than they are teaching; however, as a minimum, they must be educated at the level they are teaching • Have completed an approved instructor training program or equivalent			
Medical Director Oversight	• Provide medical oversight for all medical aspects of instruction			
Hospital/Clinical Experience	• None required at this level	• The student must demonstrate the ability to perform an adequate assessment and implement an adequate treatment plan. - These can be performed in an emergency department, ambulance, clinic, nursing home, doctor's office, on a standardized patient or in an alternative clinical environment when clinical access is not available.	• The student must demonstrate the ability to perform an adequate assessment and implement an adequate treatment plan.	

Educational Infrastructure

	EMR	EMT	AEMT	Paramedic
Field Experience	• None required at this level	• The student should participate in and document patient contacts in a field experience in an ambulance, mobile health care experience, or simulated environment when ambulance experience is not available as approved by the medical director and program director. This may occur in an ambulance, ambulance experience, or simulated environment when ambulance experiences are not available.	• The student must participate in and document both patient contacts and team leadership roles in a field experience approved by the medical director and program director.	Reference Committee on Accreditation for EMS Professions (CoAEMSP) Standards and Guidelines (www.coaemsp.org)[1]
Course Length	• Instructors may use a variety of formats to deliver content including but not limited to: - Independent student preparation - Synchronous or asynchronous instruction - Face-to-face instruction - Pre- or co-requisites • **Course length should be based on competency, not hours** - Consensus opinion is that students should need a minimum of 48 didactic and laboratory clock hours to cover the material.	• Instructors may use a variety of formats to deliver content including but not limited to: - Independent student preparation - Synchronous or asynchronous instruction - Face-to-face instruction - Pre- or co-requisites • **Course length should be based on competency, not hours** - Consensus opinion is that students should need a minimum of 150 clock hours including the four integrated phases of education (didactic, laboratory, clinical and field) to cover the material	• Instructors may use a variety of formats to deliver content including but not limited to: - Independent student preparation - Synchronous or asynchronous instruction - Face-to-face instruction - Pre- or co-requisites • **Course length should be based on competency, not hours** - Consensus opinion is that students should need a minimum of 200 clock hours beyond EMT requirements including the four integrated phases of education (didactic, laboratory, clinical and field) to cover the material	
Course Design	• Provide the following components of instruction: - Didactic instruction - Skills laboratories	• Provide the following components of instruction: - Didactic instruction - Skills laboratories - Hospital/clinical experience - Field experience		
Student Assessment	• Perform knowledge, skill and professional behavior evaluation based on educational standards and program objectives • Provide several methods of assessing achievement • Provide assessment that measures, as a minimum, entry-level competency in all domains			
Program Evaluation	• Provide evaluation of program instructional effectiveness • Provide evaluation of organizational and administrative effectiveness of program			

Glossary

Academic institution – Body or establishment instituted for an educational purpose that provides college credit or awards degrees.

Accreditation – The granting of approval by an official review board after meeting specific requirements. Typical requisites may cover areas such as program structure, processes, resources and student evaluation. The review board is nongovernmental and the review is collegial and based on self-assessment, peer assessment and judgment. The purpose of accreditation is student protection and public accountability. Additionally, accreditation can provide consistent quality education evaluation for a program's continual improvement and provides for a more consistent and uniform graduate competency.

Advanced-level care – Care that has greater potential benefit to the patient, but also greater potential risk to the patient if improperly or inappropriately performed. It is more difficult to attain and maintain competency in and requires significant background knowledge in basic and applied sciences. This level of care includes invasive and pharmacological interventions.

Affective domain – Describes learning in terms of feelings/emotions, attitudes and values. Additionally, the affective domain covers many professional behaviors that are required by an EMS clinician to perform his or her role as a health care provider. (NAEMSE, 2020)

Asynchronous instruction/learning – An instructional method that allows the learner to use a self-directed and self-paced learning format to move through the content of the course. In this type of instruction, learner-to-learner and learner-to-instructor interactions are independent of time and place. Communications and submission of work typically follow a schedule while learners and instructors do not interact at the same time.

Certification – The issuing of a certificate by a private agency based upon deemed competency established through standards adopted by that agency and met by the individual.

Cognitive domain – Describes learning that takes place through the process of thinking—it deals with facts and knowledge. (NAEMSE, 2020)

Competency – Expected behavior or knowledge to be achieved within a defined area of practice.

Credential – Generic term referring to all forms of professional qualification.

Credentialing – The umbrella term that includes the concepts of accreditation, licensure, registration and professional certification. Credentialing can establish criteria for fairness, quality, competence, and/or safety for professional services provided by authorized individuals, for products or for educational endeavors. Credentialing is the process by which an entity, authorized and qualified to do so, grants formal recognition to or records the recognition status of individuals, organizations, institutions, programs, processes, services or products that meet predetermined and standardized criteria. (NOCA, 2006)

Credentialing agency – An organization that certifies an institution's or individual's authority or claim of competence in a course of study or completion of objectives.

Curriculum – A particular course of study, often in a specialized field. For EMS education, it has traditionally included instructional techniques, detailed lesson plans with identified objectives and

numerous forms of learner evaluation. Curriculum is developed and adopted at the education program based upon National EMS Education Standards and state and local regulatory requirements. The use of local advisory groups can help tailor education to a local community's needs.

Didactic – The instructional theory, the lesson content. (NAEMSE, 2020)

Distributive education – A generic term used to describe a variety of learning delivery methods that attempt to accommodate a geographical separation (at least for some of the time) of the instructor and learners. Distributed education includes computer and web-based instruction, distance learning through television or video, web-based seminars, video conferencing and electronic and traditional educational models.

Domains – A category of learning. (See Affective domain, Cognitive domain, and Psychomotor domain.) (NAEMSE, 2020)

Entry-level competence – The level of competence expected of an individual who is about to begin a career. The minimum competence necessary to practice safely and effectively.

Health screening – A test or exam performed to find a condition before symptoms begin. Screening tests may help find diseases or conditions early when they may be easier to treat. (Medline Plus definition)

Instructional Guidelines – An emeritus resource document that provided crossover guidance for instructional content within the 2009 National EMS Education Standards.

Licensure – The act of granting an entity permission to do something that the entity could not legally do without such permission. Licensing is generally viewed by legislative bodies as a regulatory effort to protect the public from potential harm. In the health care delivery system, an individual who is licensed tends to enjoy a certain amount of autonomy in delivering health care services. Conversely, the licensed individual must satisfy ongoing requirements that ensure certain minimum levels of expertise. A license is generally considered a privilege, not a right.

Medical oversight – Physician review and approval of clinical content and matters relevant to medical authority.

National EMS Core Content – The document that defines the domain of out-of-hospital care.

National EMS Education Program Accreditation – The accreditation process for institutions that sponsor EMS educational programs.

National EMS Education Standards – The document that defines the entry-level terminal knowledge content (depth and breadth), clinical behavior/judgement, and educational infrastructure for each licensure level.

National EMS Scope of Practice Model – The document that defines the scope of practice of the various levels of EMS licensure.

Patient simulation – An alternative to a human patient to help students improve patient assessment and management skills; a high-fidelity patient simulator provides realistic simulation that responds physiologically to student therapies. These simulators have realistic features such as chests that rise and fall with respirations, pupils that react to light, pulses that can be palpated, etc.

Post-graduate internship and/or experience – Experience gained after the student has completed and graduated from school.

Practice analysis – A study conducted to determine the frequency and criticality of the tasks performed in practice.

Preceptor – A clinical teacher or instructor who is responsible for evaluating and ensuring student progress during hospital and field experiences. This individual typically has training to be able to function effectively in the role.

Primary instructor – A person who possesses the appropriate academic and/or allied health credentials and understanding of the principles and theories of education, and the required instructional experience necessary to provide quality instruction to students. (NAEMSE, 2020)

Program director – The individual responsible for an educational program or programs.

Psychomotor domain – Describes learning that takes place through the attainment of skills and bodily or kinesthetic movements. (NAEMSE, 2020)

Registration agency – An agency that is traditionally responsible for providing a product used to evaluate a chosen area. States may voluntarily adopt this product as part of their licensing process. The registration agency is also responsible for gathering and housing data to support the validity and reliability of its product.

Regulation – A rule or a statue that prescribes the management, governance or operation parameters for a given group; tends to be a function of administrative agencies to which a legislative body has delegated authority to promulgate rules and regulations to "regulate a given industry or profession." Most regulations are intended to protect public health, safety and welfare.

Scope of practice – The description of what a licensed individual legally can and cannot perform.

Standardized patient – An individual who has been thoroughly trained to accurately simulate a real patient with a medical condition; a standardized patient plays the role of a patient for students learning patient assessment, history taking skills, communication skills and other skills.

Standard of care – The domain of acceptable practice, as defined by scope of practice, current evidence, industry consensus and experts. Standard of care can vary depending on the independent variables of each situation.

Synchronous instruction – Instructional method whereby learners and instructors interact at the same time, either in the classroom or via a computer-driven course. This method allows for more immediate learner guidance and feedback using face-to-face, instant text-based messaging or real-time voice communications.

Team leader – Someone who leads the call and provides guidance and direction for setting priorities, scene and patient assessment and management. The team leader may not actually perform all the interventions but may assign others to do so.

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American Ambulance Association

American College of Emergency Physicians

American College of Surgeons Committee on Trauma

Association of Air Medical Services

Association of Critical Care Transport

Commission on Accreditation of Ambulance Services

Commission on Accreditation of Medical Transport Systems

Committee on Accreditation of Educational Programs for the EMS Professions/Commission on Accreditation of Allied Health Education Programs

Congress of Mobile Medical Professionals

EMS for Children (Health Resources and Services Administration, Maternal Child and Health Bureau)

EMS for Children Innovation & Improvement Center

Emergency Nurses Association

Georgia Department of Public Health

International Association of EMS Chiefs

International Association of Fire Chiefs

International Association of Fire Fighters

International Association of Flight & Critical Care Paramedics

State of Minnesota EMS Regulatory Board

National Association of EMS Physicians

National Association of EMTs

National Association of State EMS Officials

National EMS Management Association

National Fire Protection Agency

National Registry of EMTs

National Volunteer Fire Council

New Hampshire Department of Safety, Division of Fire Standards and Training and EMS

New Jersey State EMS Council, 17th District

North Carolina Office of EMS

US Army

US Air Force

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- Association Liaison/Stakeholder Call – July 15, 2019
- Second Development Meeting – October 3-4, 2019, Washington, DC
- Instructional Guideline Revision Meeting – January 30-February 1, 2020, Hurst, TX
- Association Liaison/Stakeholder Call – August 11, 2020
- Revision Meeting (virtual) – October 9, 2020
- Third Development Meeting (virtual) – January 28, 2021

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- August 16-September 20, 2019
- February 17-March 17, 2020
- November 13-December 14, 2020

Appendix A: Resources for EMS

National Organizations:

American Academy of Emergency Medicine (AAEM): https://www.aaem.org/

American Academy of Pediatrics (AAP): https://www.aap.org/en-us/Pages/Default.aspx

American Academy of Orthopedic Surgeons (AAOS): https://www.aaos.org/

American Ambulance Association (AAA): https://ambulance.org

American College of Emergency Physicians (ACEP): https://www.acep.org/

American College of Surgeons Committee on Trauma (ACS COT): https://www.facs.org/Quality-Programs/Trauma

American Medical Association (AMA): https://www.ama-assn.org/

American Public Health Association (APHA): https://www.apha.org/

American Trauma Society (ATS): https://www.amtrauma.org/

Association of Air Medical Services (AAMS): https://aams.org/

Association of State and Territorial Health Officials (ASTHO): https://www.astho.org/

Center for Disease Control: https//www.cdc.gov/

Commission on Accreditation of Allied Health Education Programs (CAAHEP): https://www.caahep.org/

Commission on Accreditation of Ambulance Services (CAAS): https://www.caas.org/

Commission of Accreditation of Medical Transport Systems (CAMTS): https://www.camts.org/International

National Organizations:

Commission of Accreditation of Medical Transport Systems (CAMTS): https://www.camts.org/International

Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP): https://coaemsp.org/

Emergency Nurses Association (ENA): https://www.ena.org/

International Academies of Emergency Dispatch (IAED): https://www.emergencydispatch.org/home

International Association of Emergency Managers (IAEM): https://www.iaem.org/

International Association of EMS Chiefs (IAEMSC): https://www.iaemsc.org/

International Association of EMTs and Paramedics (IAEP): https://www.iaep.org/

International Association of Fire Chiefs (IAFC): https://www.iafc.org/

International Association of Firefighters: https://www.iaff.org/

International Association of Flight & Critical Care Paramedics (IAFCCP): https://www.iafccp.org/

National Association of County & City Health Officials (NACCHO): https://www.naccho.org/about

National Association of EMS Educators (NAEMSE): https://naemse.org/

National Association of EMS Officials (NASEMSO): https://nasemso.org/

National Association of EMS Physicians (NAEMSP): https://naemsp.org/

National Association of Emergency Medical Technicians (NAEMT): https://naemt.org/

National EMS Advisory Council: https://www.ems.gov/memsac.html

National EMS Management Association (NEMSMA): https://www.nemsma.org/

National Organizations:

National EMS Quality Alliance (NEMSQA): https://www.nemsqa.org/

National Fire Protection Association (NFPA): https://www.nfpa.org/

National Organization of State Offices of Rural Health (NOSORH): https://nosorh.org/

National Registry of Emergency Medical Technicians (NREMT): https://www.nremt.org

National Volunteer Fire Council (NVFC): https://www.nvfc.org/about/

Safe States Alliance: https://www.safestates.org/

Society for Academic Emergency Medicine: https://www.saem.org/home

Federal Agencies:

Federal Interagency Committee on EMS (FICEMS): https://www.ems.gov/ficems.html

Department of Transportation: https://www.transportation.gov/

- Federal Highway Administration (FHWA): https://ops.fhwa.dot.gov/eto_tim_pse/preparedness/tim/index.htm
- National Highway Traffic Safety Administration (NHTSA): https://www.ems.gov/

***Department of Homeland Security* (DHS):** https://www.dhs.gov/

- U.S. Fire Administration (USFA): https://www.usfa.fema.gov/

***Department of Health and Human Services* (DHHS):** https://www.hhs.gov/

- Agency for Healthcare Research and Quality (AHRQ): https://www.ahrq.gov/
- Centers for Disease Control and Prevention (CDC): https://www.cdc.gov/
- National Institute for Occupational Safety and Health (NIOSH): https://www.cdc.gov/niosh/index.htm

Federal Agencies:

Centers for Medicare & Medicaid Services (CMS): https://www.cms.gov/

Health Resources & Services Administration (HRSA): https://www.hrsa.gov/

Indian Health Service (IHS): https://www.ihs.gov/

National Institutes of Health (NIH): https://www.nih.gov/

Office of the Assistant Secretary for Preparedness and Response (ASPR): https://www.phe.gov/about/aspr/Pages/default.aspx

Substance Abuse and Mental Health Services Administration (SAMHSA): https://www.samhsa.gov/

Federal Communications Commission **(FCC):** https://www.fcc.gov/

Department of Defense **(DoD):** https://dod.defense.gov/

- Office of the Assistant Secretary of Defense for Health Affairs: https://www.health.mil/About-MHS/OASDHA

Department of the Interior **(DOI):** https://www.doi.gov/

- National Park Service (NPS): https://www.nps.gov/index.htm

Department of Agriculture **(USDA):** https://www.usda.gov/

- U.S. Forest Service (USFS): https://www.fs.usda.gov/

Department of Labor **(DOL):** https://www.dol.gov/

Other Sources:

Occupational Safety and Health Administration (OSHA): https://www.osha.gov/

National Highway Traffic Safety Administration (NHTSA): www.EMS.gov

American Heart Association ECC: https://cpr.heart.org/en/resuscitation-science/cpr-and-ecc-guidelines

EMSC Innovation and Improvement Center (EIIC): https://emscimprovement.center/

National EMS Advisory Council (NEMSAC): https://www.ems.gov/nemsac.html

National EMS Information System (NEMSIS): https://nemsis.org/

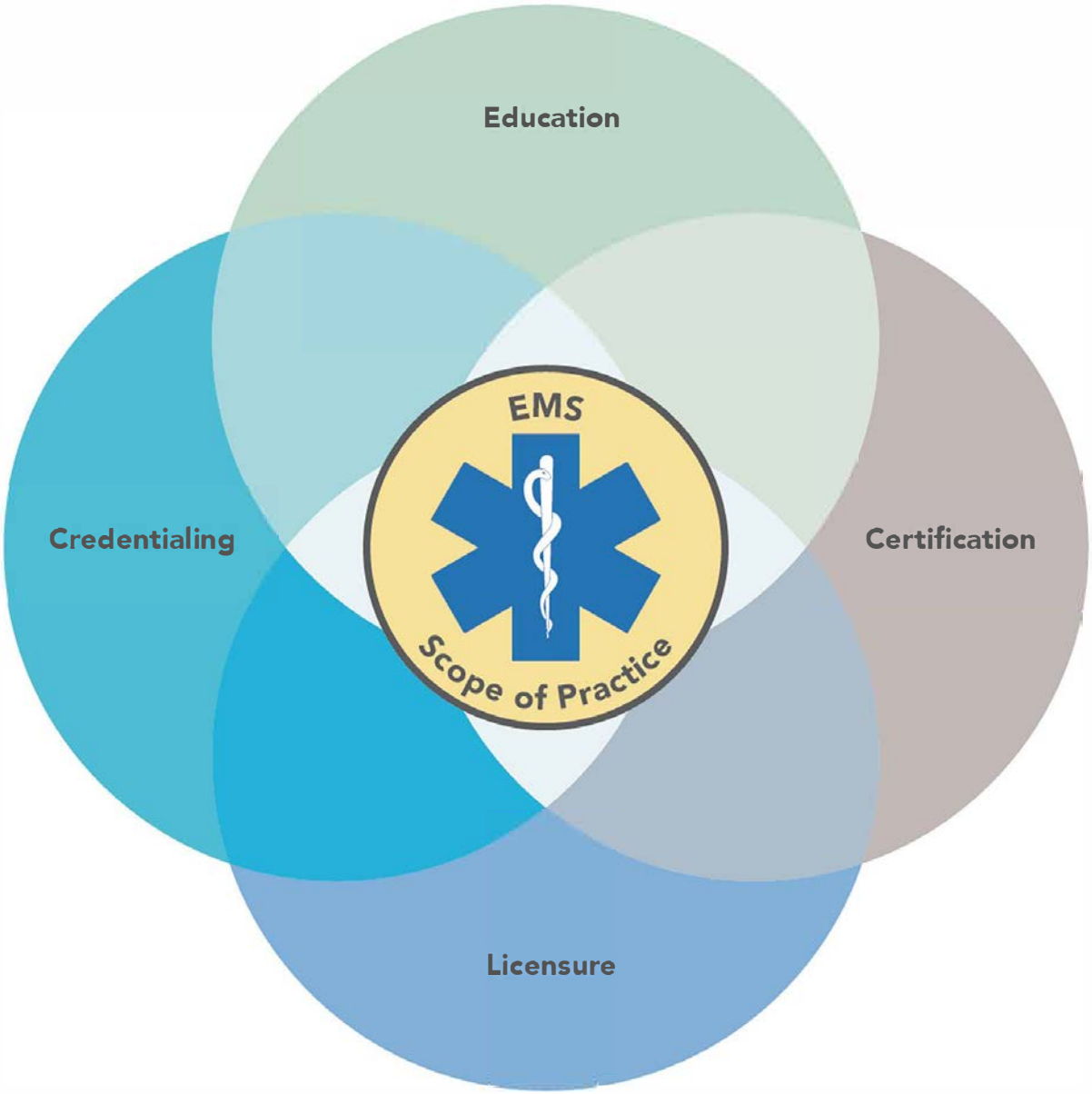
Prehospital Care Research Forum: https://www.cpc.mednet.ucla.edu/pcrf

Prehospital Guidelines Consortium: http://prehospitalguidelines.org/


NHTSA

NATIONAL EMS SCOPE OF PRACTICE MODEL 2019

The National Highway Traffic Safety Administration



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16. Abstract The National EMS Scope of Practice Model (Practice Model) supports a system of Emergency Medical Services personnel licensure—permission granted to an individual by the State to perform certain restricted activities—and is a guide for States in developing their Scope of Practice legislation, rules, and regulation. The Practice Model is a consensus document, guided by data and expert opinion that reflects the skills representing the *minimum* competencies of the levels of EMS personnel. The Practice Model has been utilized by States as a means to increase uniformity in EMS for over a decade.		
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Executive Summary

The National EMS Scope of Practice Model (Practice Model)[1] is a work product commissioned by the NHTSA as a continuation of the commitment of the National Highway Traffic Safety Administration (NHTSA) and the Health Resources and Services Administration (HRSA) to the implementation of the *EMS Agenda for the Future ("EMS Agenda").*[2] It is part of an integrated, interdependent system, first proposed in the *EMS Education Agenda for the Future: A Systems Approach ("Education Agenda")* [3] that endeavors to maximize efficiency, consistency of instructional quality, and student competence. It supports a system of EMS personnel licensure that is common in other allied health professions and is a guide for States in developing their Scope of Practice legislation, rules, and regulation.

> *Scope of practice—Defined parameters of various duties or services that may be provided by an individual with specific credentials. Whether regulated by rule, statute, or court decision, it represents the limits of services an individual may legally perform.*

State policymakers play a critical and longstanding role in occupational licensing policies, dating back to the late 19th century when the U.S. Supreme Court decision in *Dent v. West Virginia*[4] established States' rights to regulate certain professions. Shortly after, States began developing their own systems of occupational regulation and licensing. Most recently (2015), in *North Carolina State Board of Dental Examiners v. Federal Trade Commission,*[5] the U.S. Supreme Court held that when a controlling number of decision makers on an occupational licensing board are market participants, it has immunity from antitrust law only when it is actively supervised by the State. Since the legal authority to practice can be obtained only from the State, the State licensure process provides a means for States to stop unlawful practice by unlicensed individuals. This affords title protection to EMS personnel that comply with State regulations, and protection of the public from individuals who have not met minimum standards.

The *Practice Model* has been utilized as a model by States to increase regulatory uniformity in emergency medical services (EMS) for over a decade. Core to this document and the practice of every licensed health professional is compliance with four domains intended to serve the legal and ethical obligation of States to ensure the public is protected from unqualified individuals:

An individual may only perform a skill or role for which that person is:
EDUCATED (has been trained to perform the skill or role), **AND**
CERTIFIED (has demonstrated competence in the skill or role), **AND**
LICENSED (has legal authority issued by the State to perform the skill or role), **AND**
CREDENTIALED (has been authorized by medical director to perform the skill or role).

While many users of the 2019 *Practice Model* may be more interested in the list of psychomotor skills that appear as interpretive guidelines in Section VI of this report, this list is neither prescriptive nor finite. What is more important are the fundamental principles that underlie any

professional scope of practice model as explained throughout the document. To be clear: licensed practitioners are not permitted to perform any skill if they fail to conform with any of the four domains related to that particular skill, including the demonstration of ongoing competency.

A Subject Matter Expert Panel (Expert Panel) was selected to revise the Practice Model in 2017. Comprised of representatives from several national EMS organizations and the EMS public including experienced field personnel, EMS educators, EMS medical directors, EMS agency administrators, and State EMS regulators, the Expert Panel utilized the Grades of Recommendation Assessment, Development and Evaluation (GRADE) process to consider evidence and establish consensus on many topics. When the scientific literature was inconclusive, expert opinion was used to improve descriptions, roles, and attributes of each level that would support changes in practice by addressing two fundamental questions:

1. Is there evidence that the procedure or skill is beneficial to public health?
2. What is the clinical evidence that the new skill or technique as used by EMS personnel will promote access to quality health care or improve patient outcomes?

It is important to note that the Expert Panel was tasked to define recommended entry-level expectations to ensure a level of national consistency. In other words, the Practice Model suggests the minimum recommended practice requirements in advance of gaining field experience prior to supervised or individual work experience at the levels of an Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), or Paramedic.

National EMS Program Accreditation was identified in the *Education Agenda* as the means to "provide minimum program requirements for sponsorship, resources, students, operational policies, program evaluation, and curriculum" at all EMS levels. The Commission on Accreditation of Allied Health Education Programs (CAAHEP), the largest programmatic accreditor in the health sciences field, currently accredits over 2,200 education programs in 30 health sciences fields including 611 at the paramedic level across all 50 States. The Expert Panel considered the evidence related to the value of National EMS Program Accreditation toward student and patient outcomes and encourages collaboration among stakeholder groups for full implementation of national EMS program accreditation at the AEMT level by 2025.

Finally, the United States is transforming its health care system to provide quality care leading to improved health outcomes achieved through interdisciplinary collaboration. EMS personnel are key to this transformation through innovative approaches in a variety of practice settings. The Expert Panel strongly supports the national call for the elimination of barriers for all professions to practice to the full extent of their education, training, and competence with a focus on collaborative teamwork to maximize and improve care throughout the health care system.[6]

I. Background

Overview of the EMS Profession

The *Practice Model* provides a resource for defining the practice of Emergency Medical Services (EMS) personnel. EMS clinicians are unique health care professionals in that they provide medical care in many environments, locations, and situations. Much of this care occurs in out-of-hospital settings with little onsite supervision. Physician medical directors provide medical oversight to ensure and maintain safe EMS practices. This is occasionally performed in-person by medical directors in the field or through electronic communications, but more commonly is accomplished through protocol development and quality improvement based on evidence-based treatment standards and resources such as this Practice Model. EMS personnel are not independent clinicians, but are expected to execute many treatment modalities based on their assessments and protocols in challenging situations. They must be able to exercise considerable judgment, problem-solving, and decision-making skills.

In the vast majority of communities, residents call for EMS by dialing 9-1-1 when they need emergency medical care, and the appropriate resources are dispatched. EMS personnel respond and provide care to the patient in the setting in which the patient became ill or injured, including the home, field, recreational, work, and industrial settings. Many of these are in high-risk situations, such as on highways and freeways, violent scenarios, and other unique settings.

Many EMS personnel provide medical transportation services for patients requiring medical care while en route to or between medical facilities, in both ground and air ambulance entities. These transport situations may originate from emergency scenes, or may be scheduled transports moving patients from one licensed facility to another. The complexity of care delivered by EMS personnel can range from very basic skills to exceptionally complex monitoring and interventions for very high acuity patients.

Medical care at mass gatherings (e.g., concerts or sporting events) and high-risk activities (e.g., fireground operations, or law enforcement tactical operations) are a growing expectation of EMS personnel. EMS personnel sometimes serve in an emergency response or primary care role combined with an occupational setting in remote areas (e.g., off-shore oil rigs and wildland fires). EMS personnel also work in more traditional health care settings in hospitals, urgent care centers, doctor's offices and long-term care facilities. Finally, EMS personnel are involved in numerous community and public health initiatives, such as working with health care systems to provide non-emergent care and follow-up to certain patient populations as well as providing immunizations, illness and injury prevention programs, and other health initiatives.

EMS is a local function and organized in a variety of ways. These include agencies that are volunteer, career, or a combination; agencies that are operated by government, health care systems, or private entities; and agencies that are stand-alone EMS, fire-based or law enforcement-based. Common models are municipal government (fire-based or third-service) or a contracted service with a private (profit or nonprofit) entity. Multiple levels of licensure exist for EMS personnel, each offering different levels of scopes of practice. EMS personnel provide medical care to those

with emergent, urgent, and in some cases chronic medical needs. EMS is a component of the overall health care system, and delivers care as part of a system intended to reduce the morbidity and mortality associated with illness and injury. EMS care is enhanced through the linking with other community health resources and integration within the health care system.

The Evolution of the EMS Agenda for the Future

The original Practice Model was developed in 2007 as one part of the NHTSA's and HRSA's commitment to the *EMS Agenda*. Released in 1996, the *EMS Agenda* established a long-term vision for the future of EMS in the United States:

> "EMS of the future will be community-based health management that is fully integrated with the overall health care system. It will have the ability to identify and modify illness and injury risks, provide acute illness and injury care and follow up, and contribute to treatment of chronic conditions and community health monitoring. This new entity will be developed from redistribution of existing health care resources and it will be integrated with other health care professionals and public health and safety agencies. It will improve community health and result in a more appropriate use of acute health care resources. EMS will remain the public's emergency medical safety net."

NOTE: *The 1996 EMS Agenda was revised in 2018* (www.ems.gov/projects/ems-agenda-2050.html).

As a follow-up to the *EMS Agenda*, the 2000 *EMS Education Agenda* called for the development of a system to support the education, certification and licensure of entry-level EMS personnel that facilitates national consistency:

> "The *Education Agenda* established a vision for the future of EMS education, and called for an improved structured system to educate the next generation of EMS personnel. The *Education Agenda* built on broad concepts from the 1996 *Agenda* to create a vision for an educational system that will result in improved efficiency for the national EMS education process. This was to enhance consistency in education quality ultimately leading to greater entry-level graduate competence."

The *Education Agenda* proposed an EMS education system with five integrated components: National EMS Core Content, National EMS Scope of Practice Model, National EMS Education Standards, National EMS Certification, and National EMS Education Program Accreditation. The *National EMS Core Content,*[7] released in 2004, defined the domain of out-of-hospital care. The 2007 *Practice Model* divided the core content into levels of practice, defining the minimum corresponding skills and knowledge for each level. Our Nation has made great progress in implementing these documents over the preceding decade.

Several forces have combined to revise the Practice Model:

1. As States have widely implemented the Practice Model, many have chosen to add skills to their authorized scopes of practice beyond the floor called for in the national model.

2. EMS research is providing new evidence about the effectiveness of interventions in the out-of-hospital setting.
3. Our Nation is facing new health problems including explosive growth in opiate abuse, threats of violence and terrorism, and new challenges related to a growing population over the age of 65.
4. The National EMS Information System (NEMSIS) is maturing to provide information about what levels of EMS personnel are performing which skills and interventions.

The development and publication of the Practice Model represents a transition from the historical connection between scope of practice and the EMS National Standard Curricula. The Practice Model is a consensus document, guided by data and expert opinion that reflects the skills representing the *minimum* competencies of the levels of EMS personnel.

This update of the Practice Model is a natural and expected activity in ensuring that our EMS personnel are prepared to meet the needs and expectations of the communities they serve.

Implementation of the 2007 National EMS Scope of Practice Model

EMS crews today are better equipped than ever for the worst kinds of emergencies, from cardiac arrests and gunshot victims to car crashes and other life-threatening emergencies. In its "Future of Emergency Care" series, the National Academies of Science, Engineering, and Medicine (formerly known as the Institute of Medicine) envisioned high integration of the emergency and trauma care systems to function effectively. "Operationally," said the NASEM, "this means that all of the key players in a given region...must work together to make decisions, deploy resources, and monitor and adjust system operations based on performance feedback."[8]

A system that attracted a generation of emergency care personnel depicted in the popular 1970s television series "Emergency," is now faced with the realities of providing care in a fragmented health care system: limited resources, overcrowded emergency departments, inadequate mental health resources, a nationwide opioid epidemic, escalating domestic and street violence, hazardous material risks and exposures, high consequence infectious disease, and an aging population with complex needs. Moreover, there are increasing threats from terrorism and other mass casualty events that require 24/7 operational readiness along with constant non-urgent social, medical, and transport requests that were not fully contemplated in the 2007 Practice Model. These competing concerns illustrate a crucial need to find innovative strategies to improve EMS care delivery inside and outside the boundaries of an ambulance. The licensure of EMS personnel, like that of other health care licensure systems, is part of an integrated and comprehensive system to improve patient care and safety and to protect the public. The challenge facing the EMS community, including regulators, is to develop a system that establishes national standards for personnel licensure and their minimum competencies while remaining flexible enough to meet the unique needs of State and local jurisdictions.

According to the 2011 National EMS Assessment,[9] 826,111 licensed EMS personnel encounter nearly 37 million patients a year in the United States and reflect a multi-billion-dollar enterprise. Implementing the 2007 Practice Model required consideration of funding, reimbursement,

transition courses, grandfathering of current personnel, development of educational and instructional support materials, workforce issues, labor negotiations, impact on volunteerism, and other important issues. Most States required legislative and rulemaking changes, but the effort resulted in four nationally recognized levels of EMS clinicians as described by the 2007 Practice Model, compared to at least 44 different levels of EMS personnel certification reported in the United States in 1996.

According to data collected by the National Association of State EMS Officials (NASEMSO) in 2013,[10] 100% of States used the Practice Model as the minimum allowable psychomotor skill set at the EMT and paramedic levels; 76% of States were using the Practice Model as the minimum allowable psychomotor skill set at the EMR level; and 88% of States were using the Practice Model as the minimum allowable psychomotor skill set at the AEMT level. Several States have completed the transition of the Intermediate-85 level to AEMT. In December 2017, the National Registry of Emergency Medical Technicians (NREMT) announced plans to permanently retire the Intermediate-99 exam currently being used by a handful of States as a State assessment exam. The effective date for this transition to be complete is December 31, 2019.

According to data collected by NASEMSO in 2014, 90% of States effectively required National EMS Program Accreditation at the Paramedic level.

As of March 31, 2018, CAAHEP listed accredited EMS programs at the paramedic level in all 50 States; 611 paramedic programs had successfully completed the accreditation process and were fully accredited--a 92% increase in the number of nationally accredited paramedic programs from 2007. Another 78 paramedic programs held a Letter of Review (LoR) from the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP), meaning that they were actively engaged in the accreditation process.

According to real-time data[11] available from the NREMT:

- Twenty-three States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the EMR level. An additional four States utilize National EMS Certification as an optional or alternate entry process at the EMR level. Twenty-two States do not license EMRs.
- Forty-two States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the EMT level. An additional four States utilize National EMS Certification as an optional or alternate entry process at the EMT level. Four States maintain a State-based or combination process for certification and licensure at this level.
- Thirty-six States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the AEMT level. An additional four States utilize National EMS Certification as an optional or alternate entry process at the AEMT level. Ten States do not license AEMTs.
- Forty-five States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the paramedic level. An additional three States utilize

National EMS Certification as an optional or alternate entry process at the paramedic level. Two States maintain a State-based process for certification and licensure at this level.

Approach to Revising the National EMS Scope of Practice Model

Since the original 2007 Practice Model document, the evidence for which interventions and treatments are useful and effective in an EMS setting has expanded significantly. Similarly, growing interest in EMS research is putting a sharper focus on how specific interventions are affecting the care and outcomes of patients in the out of hospital setting.

This document makes use of a Patient, Population, or Problem, Intervention, Comparison, and Outcome (PICO) Model to examine five clinical topics relevant to EMS treatment. The topics were selected for a systematic review of literature for consideration as high-priority issues requiring analysis due to the frequency or need of the interventions being provided at different levels from the 2007 Practice Model in some States. These are:

1. Use of opioid antagonists by all levels of EMS personnel;
2. Therapeutic hypothermia in cardiac arrest (i.e., targeted temperature management);
3. Pharmacological pain management following an acute traumatic event;
4. Hemorrhage control (i.e., tourniquets and hemostatic dressings); and
5. CPAP/BiPAP at the EMT level.

Two constraints on using evidence to establish an EMS scope of practice are:

1. While evidence may tell us what is or is not effective, it generally does not suggest what level(s) of EMS personnel are appropriate to perform a specific intervention; and
2. There are still limitations on the evidence available for much of what is included in an EMS scope of practice.

Several suggestions were received during the national revision process to increase the EMS scope of practice at all levels. To address each of these suggestions, therapeutic benefits to the overall patient care and expected clinical outcomes were considered with the level of risk to patients, the economic burdens of additional hours of education, requirements to maintain competency, and level of supervision needed to complete the task/skill. Clinical acts that were viewed by the Expert Panel to require experience and additional training beyond the basic education program required for licensure while not providing significant measurable benefit were not adopted as a national model.

In 2017, NHTSA considered the administration of an opioid antagonist, and hemorrhage control including tourniquets and wound packing to be urgent and published a change notice to add these skills at all levels. This information has been added to the Practice Model.

As the 2019 *National EMS Scope of Practice Model* has been developed, it has relied upon extensive literature review, systematic analysis of policy documents regarding health care licensing and patient safety, the input of an Expert Panel, and extensive public input.

Analysis and research on patient safety, scope of practice, and EMS personnel competency must remain a priority among the leadership of national associations, Federal agencies, and research institutions. When EMS data collection, subsequent analysis, and scientific conclusions are published and replicated, later versions of the Practice Model should be driven by those findings.

The Role of State Government

Each State has the authority and responsibility to regulate EMS within its borders and to determine the scope of practice of State-licensed EMS personnel. The Practice Model is a consensus-based document that was developed to improve the consistency of EMS personnel licensure levels and nomenclature among States; it does not have regulatory influence unless adopted by the State. However, the widespread use and adoption of the Practice Model suggests that it represents an accepted national standard. Any State that adopts a scope of practice that significantly deviates below or above this national model should be guided by a collaborative process that analyzes the potential benefit, safety risks, costs and required training that are specific to the structure of the EMS system within the State.

The Practice Model identifies the psychomotor skills and knowledge necessary for the minimum competence of each nationally identified level of EMS personnel. This competence is assured by completion of a nationally accredited educational program and national certification. This model will be used to revise the National EMS Education Standards,[12] national EMS certification exams, and national EMS educational program accreditation. Under this model, to be eligible for State licensure, EMS personnel must be educated and verifiably competent in the minimum cognitive, affective, and psychomotor skills needed to ensure safe and effective practice at that level. Eligibility to practice is dependent on education, certification, State licensure, and credentialing by the physician medical director.

While each State has the right to establish its own levels of EMS personnel and their scopes of practice, staying as close to this model as possible, *and especially not going below it for any level*, will increase the consistency of the nomenclature and competencies of EMS personnel, facilitate reciprocity, improve professional mobility, standardize professional recognition, and decrease the necessity of each State developing its own education and certification materials. The *Education Standards*, national certification, national educational program accreditation, and publisher-developed instructional support material provide States with essential infrastructure support for each nationally defined EMS licensure level.

Some States permit licensed EMS personnel to perform skills and roles beyond the minimum skill set as they gain knowledge, additional education, experience, and (possibly) additional certification (See also Section III Specialty Care Delivered by Licensed EMS Personnel.) Care must be taken to consider the level of cognition and critical thinking necessary to perform a skill safely. For instance, some skills may be simple to perform, but require considerable clinical judgment to know when they should, and should not, be performed.

The Practice Model will continue to serve EMS in the future as it is revised and updated to include changes in medical science, new technology, and research findings.

II. Understanding Professional Scope of Practice

Overview

"Scope of practice" is a legal description of the distinction between licensed health care personnel and the lay public as well as among the different levels of licensed health care professionals. It describes the authority vested by a State in individuals that are licensed within that State. In general, scopes of practice focus on activities that are regulated by law (for example, starting an intravenous line, administering a medication, etc.). This includes technical skills that, if done improperly, represent a significant hazard to the patient and therefore must be regulated for public protection. Scope of practice establishes which activities and procedures that would represent illegal activity if performed without a license and restricts the use of professional titles to persons that are authorized by the State. In addition to drawing the boundaries between the professionals and the layperson, scope of practice also defines the boundaries among professionals, creating either exclusive or overlapping domains of practice.

> *Scope of Practice is a description of what a licensed individual legally can, and cannot, do.*

This *Practice Model* should be used by the States to develop scope of practice legislation, rules, and regulation. The specific mechanism that each State uses to define the State's scope of practice for EMS personnel varies. State scopes of practice may be more specific than those included in this model and may specifically identify both the minimum and maximum skills and roles of each level of EMS licensure.

> *Generally, changing a law is more difficult than changing a regulation; changing a regulation is more difficult than changing a policy.*

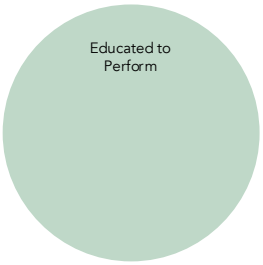
Scopes of practice are typically defined in law, regulations, and/or policy documents. Some States include specific language within the law, regulation or policy, while others refer to a separate document using a technique known as "incorporation by reference." The Practice Model provides a mechanism to implement comparable EMS scopes of practice between States.

Scopes of practice need not define every activity of a licensed individual (for example, lifting and moving patients, taking a blood pressure, direct pressure for bleeding control, etc.). The Practice Model includes suggested verbiage for the State scopes of practice in the section entitled "EMS Personnel Scopes of Practice." The interpretive guidelines include a more detailed list of skills discussed by the Expert Panel. These skills, which generally should not appear in scope of practice regulatory documents, are included to provide the user with greater insight as to the deliberations and discussion of the group and are not intended to serve as a comprehensive list of permitted skills.

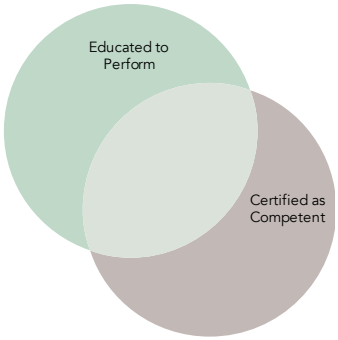
The Interdependent Relationship Between Education, Certification, Licensure, and Credentialing

The Practice Model establishes a framework that ultimately determines the range of skills and roles that an individual possessing a State EMS license is authorized to do on a given day, in a given EMS system. It is based on the notion that education, certification, licensure, and credentialing represent four separate but related activities.

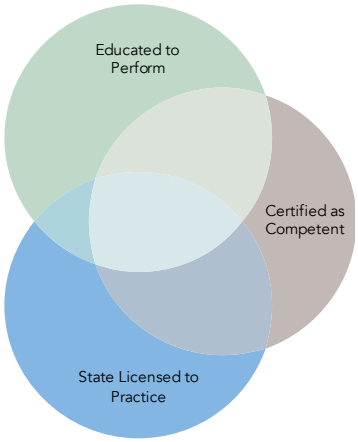
Education includes all of the cognitive, psychomotor, and affective learning that individuals have undergone throughout their lives. This includes entry-level education, continuing professional education, formal and informal learning. Clearly, many individuals have extensive education that in some cases exceeds their EMS skills or roles.



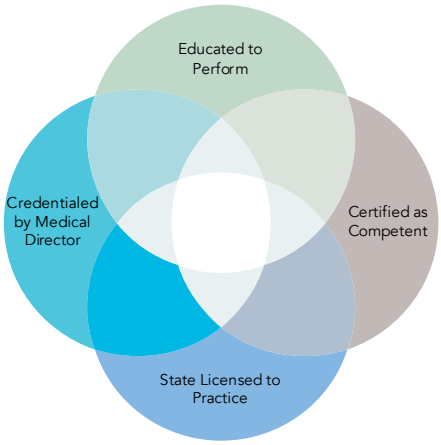
Certification is an external verification of the competencies that an individual has achieved and typically involves an examination process. While certification exams can be set to any level of proficiency, in health care they are typically designed to verify that an individual has achieved minimum competency to assure safe and effective patient care.



Licensure represents legal authority granted to an individual by the State to perform certain restricted activities. Scope of practice represents the legal limits of the licensed individual's performance. States have a variety of mechanisms to define the margins of what an individual is legally permitted to perform. This authority granted by the state is defined as licensure in this document, but some states still use "certification" to describe the same granting of authority to practice for EMS personnel. In these cases, this state authority should not be confused with certification to verify competency as described in the preceding paragraph. Throughout this document, licensure will refer to the authority of the State to grant an individual the ability to practice at a certain level of EMS practitioner, whether or not a State refers to this process as certification.



Credentialing is a clinical determination that is the responsibility of a physician medical director. It is the employer or affiliating organization's responsibility to act on the clinical credentialing status of EMS personnel in making employment and deployment decisions.

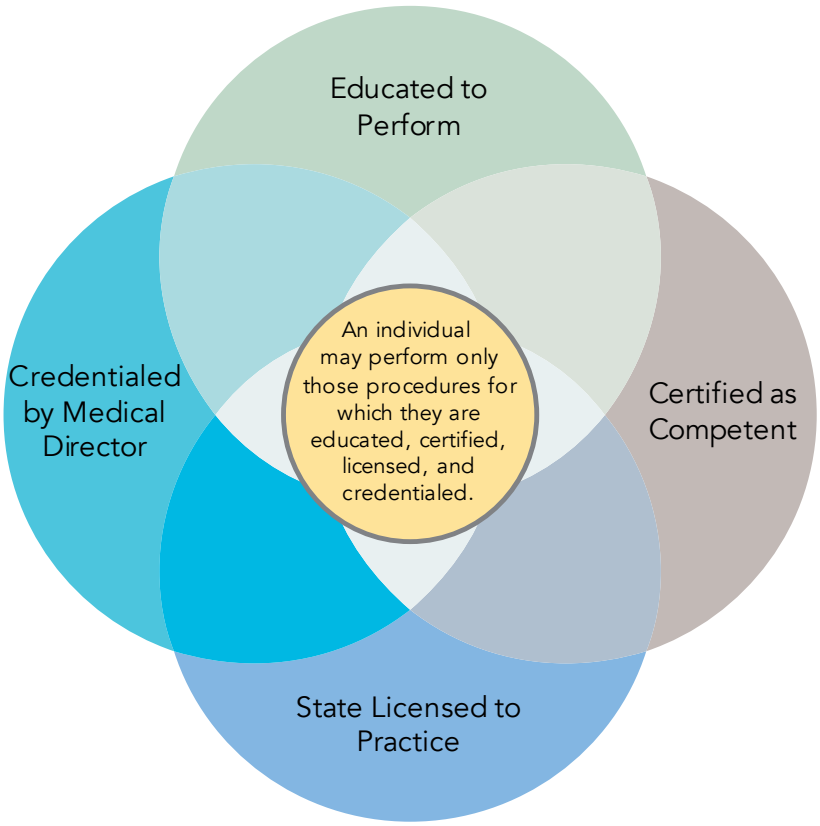


For every individual, these four domains are of slightly different relative sizes. However, one concept remains constant: an individual may only perform a skill or role for which that person is:

- Educated (has been trained to perform the skill or role), AND
- Certified (has demonstrated competence in the skill or role), AND
- Licensed (has legal authority issued by the State to perform the skill or role), AND
- Credentialed (has been authorized by medical director to perform the skill or role).

This relationship is represented graphically in Figure 1.

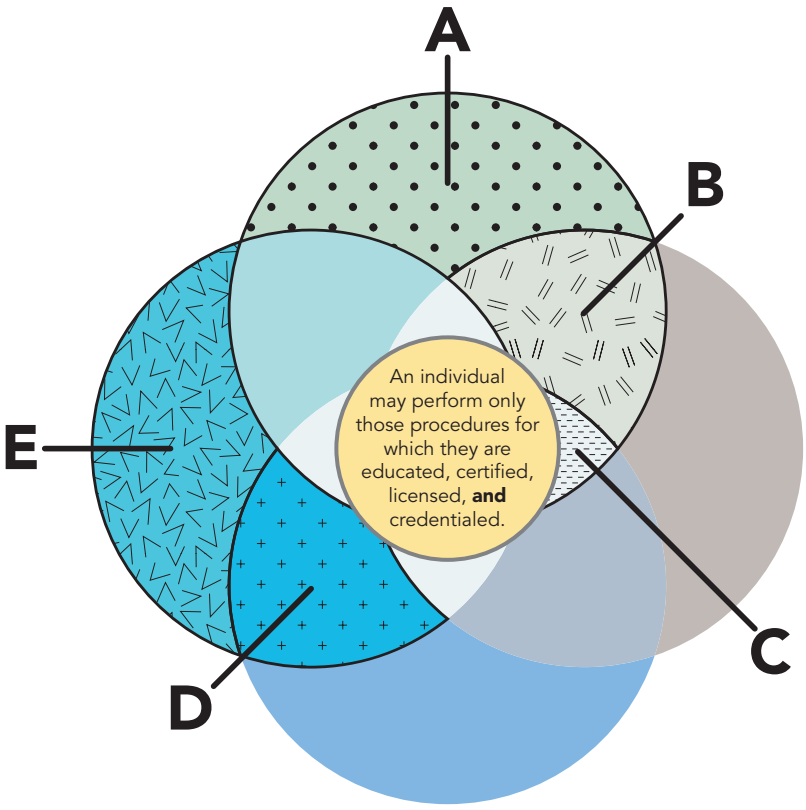
Figure 1: The relationship among education, certification, licensure, and credentialing.

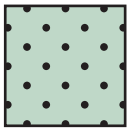


The center of Figure 1, where all four elements overlap, represents skills and roles for which an individual has been educated, certified, licensed by a State, and credentialed. This is the only acceptable region of performance, as it entails four overlapping and mutually dependent levels of public protection: education, certification, licensure, and credentialing. Individuals may perform those roles and skills for which they are educated, certified, licensed, AND credentialed.

A significant risk to patient safety occurs when EMS personnel are placed into situations and roles for which they are not experientially or educationally prepared. It is the shared responsibility of medical oversight by a physician, clinical and administrative supervision, regulation, and quality assurance to ensure that EMS personnel are not placed in situations where they exceed the State's scope of practice. For the protection of the public, regulation must assure that EMS personnel are functioning within their scope of practice, level of education, certification, and credentialing process. Figure 2 illustrates the interconnections among education, certification of baseline competency, licensing by a regulating body, and credentialing by the medical director.

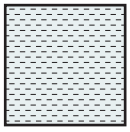
Figure 2: Skill and role situations not covered by all four elements for protection of the public.



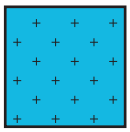


Region "A" represents skills and roles for which an individual has received education, but is neither certified, licensed, nor credentialed. For example, an EMT in a paramedic class is taught paramedic level skills; despite being trained, the EMT cannot perform those skills until such time that he is certified, licensed, and credentialed by the Local EMS Medical Director.

Region "B" represents skills and roles in which an individual has been educated and certified, but are not part of the State license and credentialing. For example, a Paramedic that trained as a corpsman is educated and certified in basic suturing, however, the skill is not considered "core" in the civilian sector. It would now be out of his/her scope of practice, and cannot be performed without special review and authorization by the State and medical director.



Region "C" represents skills and roles for which an individual is educated, certified, and licensed, but has no local/jurisdictional credentialing. For example, an off-duty Paramedic arriving at the scene of an incident outside of his jurisdiction usually is not credentialed to perform advanced skills. In this case, performing an advanced skill would represent a violation of his scope of practice.



Region "D" represents skills or roles the State has authorized (licensed) but are not addressed by initial education programs or certification processes. These skills require local entities to assure the education and competency verification, in addition to local credentialing. For example, rapid sequence induction for intubation (RSI) in some States is legally permitted, but usually not taught as part of the initial education, nor is it part of the certification process. Some individuals (for example, flight paramedics) may be authorized to perform RSI; however, this is only permissible if the local entity assumes the responsibility for satisfying the requirements of education and certification of competency. Credentialing remains mandatory, and additional process may be needed to satisfy local physician medical direction that skills in this region are safe and appropriate. Nonetheless, all four domains must be accomplished before any skill or role can be authorized.

Region "E" represents skills or roles which a medical director wants an individual to perform but for which they have not yet been educated, certified, or licensed to perform. Typically, skills and roles in this region are new or emerging interventions that have the potential to drive the future of EMS practice based on evolving evidence. Innovations such as waveform capnography, CPAP, and the use of naloxone by EMRs have all originated in this region. There is considerable State-to-State variability in dealing with this situation. Some States have regulations that restrict licensed individuals from functioning beyond their scope of practice. In others, regulatory mechanisms exist that enable a local physician to assume responsibility for the performance of new skills and roles performed by an EMS provider. Most States fall somewhere between these extremes and have mechanisms by which local medical directors can obtain an expansion/variance of a scope of practice if they can demonstrate the need and appropriate mechanism to reasonably assure patient safety. In these circumstances, if no process exists to obtain State level authorization for additional skills or roles, then items that fall in Region "E" cannot be practiced. Therefore, it is important that States recognize the need for innovation and progression within the field, and establish processes for Region E interventions to be performed; appropriate education, evaluation and certification under the medical director's oversight must occur prior to implementation. Only then can these new interventions work their way into the standardized education, certification, and licensing domains to become part of the ever-evolving standard of care.

In many States, day-to-day clarification of scopes of practice, management of an appeal process, or otherwise assuring the adequacy of medical direction is the role of the State EMS Medical Director. Some States have licensure boards, often consisting of medical directors, administrators, peers, and public representatives that help adjudicate and clarify scope of practice issues.

Scope of Practice versus Standard of Care

Scope of practice does not define a standard of care, nor does it define what should be done in a given situation (i.e., it is not a practice guideline or protocol). It defines what is legally permitted to be done by some or all the licensed individuals at that level, not what must be done. Table 1 describes some of the differences between scope of practice and standard of care.

Table 1: Relationship between scope of practice and standard of care

	Scope of Practice	Standard of Care
Purpose	Deals with the question, "Are you/were you *allowed* to do it?"	Deals with the question, "Did you do the right thing and did you do it properly?"
Legal implications	Act of commission is a criminal offense	Acts of commission or omission not in conformance with the standard of care may lead to civil liability
Variability	May vary from individual to individual. Does not vary based on circumstances.	Situational, depends on many variables
Defined by	Established by statute, rules, regulations, precedent, and/or licensure board interpretations	Determined by scope of practice, literature, expert witnesses, and juries
Miscellaneous	It is difficult to regulate knowledge through scope of practice.	Used to evaluate the totality of circumstances. What would a reasonable EMS person do in the same or similar circumstances?

A Comprehensive Approach to Safe and Effective Out of Hospital Care

Scope of practice is only one part of health care regulation and regulation is only one component of a comprehensive approach to improved patient care and safety. The primary goal of State regulation of EMS personnel is to protect the public from harm by ensuring EMS personnel possess a minimum level of competency and professional behaviors. Safe and effective EMS care is the cumulative effect of a cascade of many individual decisions involving every level of EMS leadership, medical direction, supervision, management, and regulation. Safe and effective patient care is the first priority and shared responsibility of everyone within an EMS agency and the EMS system. Safe and effective care cannot be accomplished through any single activity, but is best accomplished with an integrated system of checks and balances. All components of this comprehensive approach to safe and effective patient care are mutually supportive of and dependent upon each other.

III. Special Considerations

Liability in EMS Licensing and Oversight

A license is the official or legal permission to engage in or perform a regulated activity. In the United States, State governments generally hold the authority to issue licenses including EMS licenses. This is important because States ultimately need to be able to halt EMS personnel from performing in ways that are dangerous or harmful to the public.

Licensing differs from certification in that certification is an affirmation of competence while licensing is the authorization to perform the regulated health care activity. EMS personnel most commonly function on behalf of some volunteer or career organization that acts in a supervisory relationship as the person's employer.

EMS personnel have functioned under the supervision of physician medical directors since the 1960s. This physician oversight has been invaluable in assuring and improving the quality of care provided by EMS personnel. The close relationship of EMS personnel and physicians in this evolving health care discipline and descriptions of medical direction in early EMS curricula has led to the impression and belief by some that medical direction physicians are extending their licenses to authorize EMS practice. The logic of that belief would be that if an EMS person acted incompetently or dangerously, the State would take an action on the physician medical director's license. Not only would that be ineffective in halting the EMS practitioner's practice, it would put at risk the physician who might be able to help correct whatever problem exists with the EMS practitioner's practice.

The concept that EMS personnel are somehow practicing "under the physician's license" is simply not accurate. The umbrella of physician supervision and collaboration can never be used to replace the certification, scope of practice and individual responsibility of licensed EMS personnel. EMS personnel hold their own license and the relevant State authority can restrict or remove that license to stop incompetent or dangerous practice.

EMS personnel do however, practice under the oversight of physician medical directors. Medical directors are expected to provide appropriate supervision in the interest of public safety and are obligated to revoke or restrict local credentialing as appropriate. Failure to provide appropriate oversight can be determined to be inadequate supervision and expose the physician to professional liability. In this respect, physician medical directors can be accountable, not for individual acts of EMS personnel, but for their larger oversight role.

Scope of Practice for Special Populations

EMS personnel are expected to meet the urgent health care needs of all patients with consideration to age, race, gender, cultural, religious, and ethnic considerations consistent with their defined scope of practice. Recognized special populations include, but may not be limited to, children, older patients, lesbian, gay, bisexual, transgender, and questioning (LGBTQ) patients, bariatric

patients, patients with disabilities, and patients with limited access to health care due to geographic, demographic, socioeconomic, or other reasons.

Scope of Practice During Disasters, Public Health Emergencies, and Extraordinary Circumstances

The Practice Model is intended to cover a range of situations and circumstances where EMS personnel may provide emergency care. It is virtually impossible to create a scope of practice that considers every unique situation, extraordinary circumstance, and possible practice situation. In some cases, EMS personnel may be the only medically trained individuals at the scene of a disaster when other health care resources are overwhelmed. This document cannot account for every situation, but rather is designed to establish a system that works for entry-level personnel under normal circumstances. States may wish to modify or expand the scope of practice of EMS personnel in times of disaster or crisis with proper education, medical oversight, and quality assurance to reasonably protect patient safety.

Scope of Practice for EMS Personnel Functioning in Nontraditional Roles

The delivery of health care has been transformed over the last half-century by exponential and significant advances in medicine, research, and technology. The increasing portability and affordability of diagnostic and treatment equipment and the demand to increase care quality while reducing the cost of providing it has changed the demand for health care services in ways that were not envisioned with the passage of the National Highway Safety Act in 1966.[13] EMS personnel are identifying volunteer and career opportunities in a range of nontraditional settings that fulfill an important public health, public safety, and patient care need, such as large-scale concerts, sporting events and festivals, industrial, frontier and wilderness environments, wildland fire settings, community health, and more. Enabled by progressive rulemaking, occupational partners and innovative health care systems have been successfully utilizing educated, experienced, and licensed EMS personnel in patient care settings, such as health clinics and hospitals for the past several years and they have become recognized as an invaluable member of the health care team. States with practice restrictions based on location, vehicle use, agency type, or transport provisions are encouraged to review existing laws, regulations, and policies to identify barriers that prevent EMS personnel from functioning in any setting at a level to the full extent of their education, certification, licensure, and credentialing.

Specialty Care Delivered by Licensed EMS Personnel

Specialization of EMS personnel continues to be an evolving area of interest to the national EMS community. This reflects a broader specialization trend that has occurred in medicine for over a century as well ongoing specialization in nursing and other allied health fields. In general, specialization occurs in response to an identified need for an expanded body of knowledge and skills that are best served by a formal supplemental educational and credentialing process. In many instances throughout health care the development and oversight of a specialty recognition process is led by health professionals through specialty boards and implemented in conjunction with State

regulators. This approach effectively combines national consistency achieved through the specialty certification process with the legal authority to practice.

Specialty recognition, credentialing, or endorsement is the outcome of a formally defined process and mechanism for actively assessing that an individual possesses and has mastered a unique body of knowledge over and above entry-level cognitive, affective, and psychomotor domains of learning and that they can apply this knowledge and related skill set to improve care provided for patients. Numerous health care and non-health care professions regulated by States have one or more specialty certification areas that have been defined, in part, by members of the profession itself. Several EMS specialties have emerged since the 2000 release of the *Education Agenda.*

Integration of specialty care requires appropriate educational preparation, a rigorous certification process, integration with State scope of practice and licensure regulations, and local credentialing by the medical director and EMS agency.

The legal authority for personnel to practice is established by State legislative action. Licensure authority prohibits anyone from practicing a profession unless they are licensed and authorized by the State, regardless of whether or not the individual has been certified by a nongovernmental or private organization.

States often approach specialization policy though two mechanisms. The first is development of an additional licensure level beyond those described in this model. The second is to enact scope of practice regulations at the State level that allow for additional practice, often called an endorsement, in addition to an existing license level. This second approach is used extensively in the medical and nursing professions. Both approaches benefit from ongoing cooperation and coordination with non-governmental specialty boards.

Military to Civilian EMS Transition

Military medics and corpsmen treat combat wounds in some of the harshest conditions that most civilian EMS personnel will likely never see and they are undoubtedly well qualified to serve a domestic mission to achieve zero preventable deaths in the war on trauma (#ZPD2025). While support for military to civilian EMS transition is broad, the cognitive, affective, and psychomotor coursework for military medical trainees is variable depending on the individual service member's military assignment, which makes determining related equivalency and awarding experiential credit for military service across five armed services branches somewhat complex. Much work has been done to identify pathways for military corpsmen to transition to civilian EMS positions:

- The U.S. Department of Defense has consolidated a vast majority of health care specialist training across the armed services branches to the operational center at the Medical Education and Training Campus (METC) at Fort Sam Houston, Texas. METC is working to ensure that more service-required education and training programs satisfy the ever-increasing course completion requirements of the civilian sector.
- EMS programs are increasingly providing "advanced placement" evaluation and assistance to separating service members, particularly at the AEMT and paramedic levels.

- Over the next several years, health science training programs at METC will transition to the METC Branch Campus of the College of Allied Health Sciences at the Uniformed Services University so that all military students will receive a consistent and recognizable transcript from a regionally accredited degree granting institution of higher education.[14]
- States have developed an updated model for conducting EMS personnel licensure evaluations including the integration of EMS licensees from other States and from the military setting.

Course completion of a program that meets or exceeds the *Education Standards* signifies that an individual has fulfilled entry-level education requirements that lead to National EMS Certification provided by the National Registry of Emergency Medical Technicians (NREMT). Active NREMT Certification has been demonstrated to be the most expeditious path for military personnel to seek EMS licensure with the States.

IV. Description of Levels

Emergency Medical Responder (EMR)

Description

The EMR is an out of hospital practitioner whose primary focus is to initiate immediate lifesaving care to patients while ensuring patient access to the emergency medical services system. EMRs possess the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response and rely on an EMS or public safety agency or larger scene response that includes other higher-level medical personnel. When practicing in less populated areas, EMRs may have a low call volume coupled with being the only care personnel for prolonged periods awaiting arrival of higher levels of care. EMRs may assist, but should not be the highest-level person caring for a patient during ambulance transport. EMRs are often the first to arrive on scene. They must quickly assess patient needs, initiate treatment, and request additional resources.

Emergency Medical Responders:

- Function as part of a comprehensive EMS response, community, health, or public safety system with clinical protocols and medical oversight.
- Perform basic interventions with minimal equipment to manage life threats, medical, and psychological needs with minimal resources until other personnel can arrive.
- Are an important link within the 9-1-1 and emergency medical services systems.

Other Attributes

The focused and limited scope of this level makes it suitable for employee cross training in settings where emergency medical care is not the EMRs primary job function. Examples include firefighters, law enforcement, lifeguards, backcountry guides, community responders, industrial workers and similar jobs. EMRs advocate health and safety practices that may help reduce harm to the public.

Education Requirements

Successful completion of an EMR training program that is:

- Compliant with a uniform national standard for quality, and
- Approved by the State or U.S. territory.

Primary Role

Initiate patient care within the emergency medical services system.

Type of Education

Vocational/Technical setting

- Certificate awarded for successful completion

Critical Thinking
Within a limited set of protocol-driven, clearly defined principles.

Level of Supervision
General medical oversight required. Assist higher-level personnel at the scene and during transport.

Emergency Medical Technician (EMT)

Description
An EMT is a health professional whose primary focus is to respond to, assess and triage emergent, urgent, and non-urgent requests for medical care, apply basic knowledge and skills necessary to provide patient care and medical transportation to/from an emergency or health care facility. Depending on a patient's needs and/or system resources, EMTs are sometimes the highest level of care a patient will receive during an ambulance transport. EMTs often are paired with higher levels of personnel as part of an ambulance crew or other responding group. With proper supervision, EMTs may serve as a patient care team member in a hospital or health care setting to the full extent of their education, certification, licensure, and credentialing. In a community setting, an EMT might visit patients at home and make observations that are reported to a higher-level authority to help manage a patient's care. When practicing in less populated areas, EMTs may have low call volume coupled with being the only care personnel during prolonged transports. EMTs may provide minimal supervision of lower level personnel. EMTs can be the first to arrive on scene; they are expected to quickly assess patient conditions, provide stabilizing measures, and request additional resources, as needed.

Emergency Medical Technicians:

- Function as part of a comprehensive EMS response, community, health, or public safety system with defined clinical protocols and medical oversight.
- Perform interventions with the basic equipment typically found on an ambulance[15] to manage life threats, medical, and psychological needs.
- Are an important link within the continuum of the emergency care system from an out-of-hospital response through the delivery of patients to definitive care.

Other Attributes
The majority of personnel in the EMS system are licensed at the EMT level. The EMT plays many important roles and possesses the knowledge and skill set to initially manage any emergency until a higher level of care can be accessed. In areas where AEMT or Paramedic response is not available, the EMT may be the highest level of EMS personnel a patient encounters before reaching a hospital. EMTs advocate health and safety practices that may help reduce harm to the public.

Education Requirements
Successful completion of an EMT training program that is:

- Compliant with a uniform national standard for quality, and

- Approved by the State or U.S. territory

Primary Role
Provide basic patient care and medical transportation within the emergency care system.

Type of Education
Vocational/Technical setting

- Diploma or certificate awarded for successful completion.

Critical Thinking
Within a limited set of protocol-driven, clearly defined principles that:

  - Engages in basic risk versus benefit analysis.
  - Participates in making decisions about patient care, transport destinations, the need for additional patient care resources, and similar judgments.

Level of Supervision
General medical oversight required. Some autonomy at basic life support level, assist higher-level personnel at the scene and during patient transport.

Advanced Emergency Medical Technician (AEMT)

Description
The AEMT is a health professional whose primary focus is to respond to, assess and triage non-urgent, urgent, and emergent requests for medical care, apply basic and focused advanced knowledge and skills necessary to provide patient care and/or medical transportation, and facilitate access to a higher level of care when the needs of the patient exceed the capability level of the AEMT. The additional preparation beyond EMT prepares an AEMT to improve patient care in common emergency conditions for which reasonably safe, targeted, and evidence-based interventions exist. Interventions within the AEMT scope of practice may carry more risk if not performed properly than interventions authorized for the EMR/EMT levels. With proper supervision, AEMTs may serve as a patient care team member in a hospital or health care setting to the full extent of their education, certification, licensure, and credentialing. In a community setting an AEMT might visit patients at home and make observations that are reported to a higher-level authority to help manage a patient's care.

Advanced Emergency Medical Technicians:

- Function as part of a comprehensive EMS response, community, health, or public safety system with medical oversight.
- Perform interventions with the basic and advanced equipment typically found on an ambulance.

- Perform focused advanced skills and pharmacological interventions that are engineered to mitigate specific life-threatening conditions, medical, and psychological conditions with a targeted set of skills beyond the level of an EMT.
- Function as an important link from the scene into the health care system.

Other Attributes

The learning objectives and additional clinical preparation for AEMTs exceed the level of an EMT. In areas where Paramedic response is not available, the AEMT may be the highest level of EMS personnel a patient encounters before reaching a hospital. AEMTs advocate health and safety practices that may help reduce harm to the public.

Education Requirements

Successful completion of a nationally accredited or CAAHEP accredited AEMT program that meets all other State/territorial requirements. (The target for full implementation of AEMT program accreditation is January 1, 2025.)

Primary Role

Provide basic and focused advanced patient care; determine transportation needs within the health care system.

Type of Education

Vocational/Technical or Academic Setting

- Diploma, certificate, or associates degree awarded for successful completion.

Critical Thinking

Within a limited set of protocol-driven, clearly defined principles that:

- Engages in basic risk versus benefit analysis.
- Participates in making decisions about patient care, transport destinations, the need for additional patient care resources, and similar judgments.

Level of Supervision

Medical oversight required. Minimal autonomy for limited advanced skills. Provides some supervision of lower level personnel. Assist higher-level personnel at the scene and during transport.

Paramedic

Description

The paramedic is a health professional whose primary focus is to respond to, assess, and triage emergent, urgent, and non-urgent requests for medical care, apply basic and advanced knowledge and skills necessary to determine patient physiologic, psychological, and psychosocial needs, administer medications, interpret and use diagnostic findings to implement treatment, provide complex patient care, and facilitate referrals and/or access to a higher level of care when the needs of the patient exceeds the capability level of the paramedic. Paramedics often serve as a patient

care team member in a hospital or other health care setting to the full extent of their education, certification, licensure, and credentialing. Paramedics may work in community settings where they take on additional responsibilities monitoring and evaluating the needs of at-risk patients, as well as intervening to mitigate conditions that could lead to poor outcomes. Paramedics help educate patients and the public in the prevention and/or management of medical, health, psychological, and safety issues.

Paramedics:

- Function as part of a comprehensive EMS response, community, health, or public safety system with advanced clinical protocols and medical oversight.
- Perform interventions with the basic and advanced equipment typically found on an ambulance, including diagnostic equipment approved by an agency medical director.
- May provide specialized interfacility care during transport.
- Are an important link in the continuum of health care.

Other Attributes

Paramedics commonly facilitate medical decisions at an emergency scene and during transport. Paramedics work in a variety of specialty care settings including but not limited to ground and air ambulances, occupational, in hospital, and community settings. Academic preparation enables paramedics to use a wide range of pharmacology, airway, and monitoring devices as well as to utilize critical thinking skills to make complex judgments such as the need for transport from a field site, alternate destination decisions, the level of personnel appropriate for transporting a patient, and similar judgments. Due to the complexity of the Paramedic scope of practice and the required integration of knowledge and skills, many training programs are moving towards advanced training at the Associate degree or higher level.

Education Requirements

Successful completion of a nationally accredited Paramedic program that meets all other State requirements.

Primary Role

Provide advanced care in a variety of settings; interpretive and diagnostic capabilities; determine destination needs within the health care system; specialty transport.

Type of Education

Academic setting

- Diploma, Certificate, Associate, or Bachelors/Baccalaureate Degree awarded for successful completion.

Critical Thinking

Within a set of protocol-driven, clearly defined principles that:

  - Engages in complex risk versus benefit analysis.

- Participates in making decisions about patient care, transport destinations, the need for additional patient care resources, and similar judgments.

Level of Supervision

Paramedics operate with collaborative and accessible medical oversight, recognizing the need for autonomous decision-making. Frequently provides supervision and coordination of lower level personnel.

V. Depth and Breadth of Knowledge

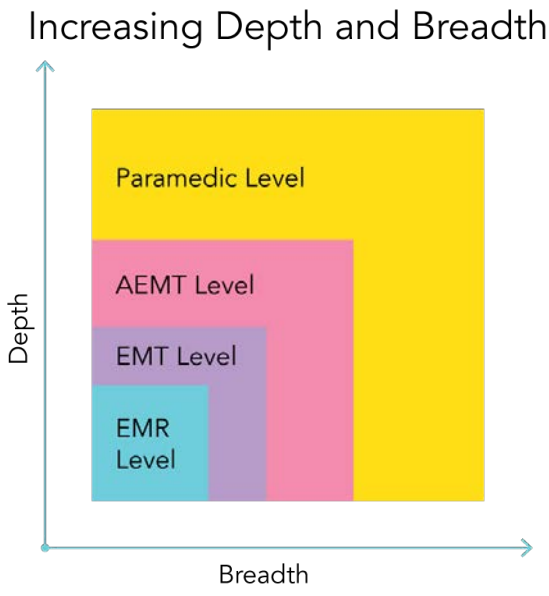
> *"Breadth of learning refers to the full span of knowledge of a subject. Depth of learning refers to the extent to which specific topics are focused upon, amplified and explored. Within any area of study, there will be both breadth and depth of learning, which increase as students advance their knowledge."*[16]

It is important to note that the Practice Model and *Education Standards* assume a progression of the three domains of learning (cognitive, affective, and psychomotor) that affects EMS practice from the EMR level through the Paramedic level. That is, licensed personnel at each level are responsible for all knowledge, judgments, and skills at their level and all levels *preceding* their level. The Practice Model also assumes that EMS personnel not only receive requisite knowledge, but they can comprehend data, apply knowledge, analyze and synthesize information, and evaluate the outcomes of their actions.

Typically, scope of practice refers to the tasks and roles that licensed personnel are legally authorized to perform. In general, it does not describe the requisite knowledge necessary to perform those tasks and roles competently. As outlined in the *Education Agenda*, the responsibility for determining the knowledge necessary to safely perform skills, tasks, and roles falls to the EMS educators.

The increasing depth and breadth of cognitive, affective, and psychomotor material envisioned across each level of EMS licensure is graphically represented in Figure 3.

Figure 3: Increasing Depth and Breadth of Knowledge from EMR through Paramedic



VI. Interpretive Guidelines

The interpretive guidelines are used to help guide the users of this document by providing additional insight into the discussions and deliberations that revolved around the decisions of the *Expert Panel*. These interpretive guidelines represent the collective opinions of the *Expert Panel* in June 2018.

The interpretive guidelines are included to allow future users to apply similar methodology in deciding appropriateness of new interventions at each personnel level. They are illustrative and NOT all-inclusive.

I. Skill – Airway/Ventilation/Oxygenation

I. Skill – Airway / Ventilation / Oxygenation	EMR	EMT	AEMT	Paramedic
Airway – nasal		X	X	X
Airway – oral	X	X	X	X
Airway – supraglottic			X	X
Bag-valve-mask (BVM)	X	X	X	X
CPAP		X	X	X
Chest decompression - needle				X
Chest tube placement – assist only				X
Chest tube – monitoring and management				X
Cricothyrotomy				X
End tidal CO_2 monitoring and interpretation of waveform capnography			X	X
Gastric decompression – NG Tube				X
Gastric decompression – OG Tube				X
Head tilt - chin lift	X	X	X	X
Endotracheal intubation				X
Jaw-thrust	X	X	X	X
Mouth-to-barrier	X	X	X	X

I. Skill – Airway / Ventilation / Oxygenation	EMR	EMT	AEMT	Paramedic
Mouth-to-mask	X	X	X	X
Mouth-to-mouth	X	X	X	X
Mouth-to-nose	X	X	X	X
Mouth-to-stoma	X	X	X	X
Airway Obstruction – dislodgement by direct laryngoscopy				X
Airway Obstruction – manual dislodgement techniques	X	X	X	X
Oxygen therapy – High flow nasal cannula				X
Oxygen therapy – Humidifiers		X	X	X
Oxygen therapy – Nasal cannula	X	X	X	X
Oxygen therapy – Non-rebreather mask	X	X	X	X
Oxygen therapy – partial rebreather mask		X	X	X
Oxygen therapy – simple face mask		X	X	X
Oxygen therapy – Venturi mask		X	X	X
Pulse oximetry		X	X	X
Suctioning – Upper airway	X	X	X	X
Suctioning – tracheobronchial of an intubated patient			X	X

II. Skill – Cardiovascular/Circulation

II. Skill – Cardiovascular / Circulation	EMR	EMT	AEMT	Paramedic
Cardiopulmonary resuscitation (CPR)	X	X	X	X
Cardiac monitoring – 12 lead ECG acquisition and transmission		X	X	X
Cardiac monitoring – 12 lead electrocardiogram (interpretive)				X

II. Skill – Cardiovascular / Circulation	EMR	EMT	AEMT	Paramedic
Cardioversion – electrical				X
Defibrillation – automated / semi-automated	X	X	X	X
Defibrillation – manual				X
Hemorrhage control – direct pressure	X	X	X	X
Hemorrhage control – tourniquet	X	X	X	X
Hemorrhage control – wound packing	X	X	X	X
Transvenous cardiac pacing – monitoring and maintenance				X
Mechanical CPR device		X	X	X
Telemetric monitoring devices and transmission of clinical data, including video data		X	X	X
Transcutaneous pacing				X

III. Skill – Splinting, Spinal Motion Restriction (SMR), and Patient Restraint

III. Skill – Splinting, Spinal Motion Restriction (SMR), and Patient Restraint	EMR	EMT	AEMT	Paramedic
Cervical collar	X	X	X	X
Long spine board		X	X	X
Manual cervical stabilization	X	X	X	X
Seated SMR (KED, etc.)		X	X	X
Extremity stabilization - manual	X	X	X	X
Extremity splinting	X	X	X	X
Splint – traction		X	X	X
Mechanical patient restraint		X	X	X

III. Skill – Splinting, Spinal Motion Restriction (SMR), and Patient Restraint	EMR	EMT	AEMT	Paramedic
Emergency moves for endangered patients	X	X	X	X

IV. Skill – Medication Administration – Routes

IV. Skill – Medication Administration – Routes	EMR	EMT	AEMT	Paramedic
Aerosolized/nebulized		X	X	X
Endotracheal tube				X
Inhaled		X	X	X
Intradermal				X
Intramuscular			X	X
Intramuscular – auto-injector	X	X	X	X
Intranasal			X	X
Intranasal - unit-dosed, premeasured	X	X	X	X
Intraosseous – initiation, peds or adult			X	X
Intravenous			X	X
Mucosal/Sublingual		X	X	X
Nasogastric				X
Oral		X	X	X
Rectal				X
Subcutaneous			X	X
Topical				X
Transdermal				X

V. Medical Director Approved Medications

V. Medical Director Approved Medications	EMR	EMT	AEMT	Paramedic
Use of epinephrine (auto-injector) for anaphylaxis (supplied and carried by the EMS agency)		X	X	X
Use of auto-injector antidotes for chemical/hazardous material exposures	X	X	X	X
Use of opioid antagonist auto-injector for suspected opioid overdose	X	X	X	X
Immunizations			X	X
Inhaled – beta agonist/bronchodilator and anticholinergic for dyspnea and wheezing		X	X	X
Inhaled – monitor patient administered (i.e., nitrous oxide)			X	X
Intranasal - opioid antagonist for suspected opioid overdose	X	X	X	X
Intravenous			X[1]	X
Maintain an infusion of blood or blood products				X
Oral aspirin for chest pain of suspected ischemic origin		X	X	X
Oral glucose for suspected hypoglycemia		X	X	X
Oral over the counter (OTC) analgesics for pain or fever		X	X	X
OTC medications, oral and topical				X
Parenteral analgesia for pain			X	X
Sublingual nitroglycerin for chest pain of suspected ischemic origin – limited to *patient's own prescribed medication*		X		
Sublingual nitroglycerin for chest pain of suspected ischemic origin			X	X
Thrombolytics				X

[1] Limited to analgesia, antinausea/antiemetic, dextrose, epinephrine, glucagon, naloxone, and others defined by state/local protocol.

VI. Skill – IV Initiation/Maintenance Fluids

VI. Skill – IV Initiation/Maintenance Fluids	EMR	EMT	AEMT	Paramedic
Access indwelling catheters and implanted central IV ports				X
Central line – monitoring				X
Intraosseous – initiation, peds or adult			X	X
Intravenous access			X	X
Intravenous initiation - peripheral			X	X
Intravenous – maintenance of non-medicated IV fluids			X	X
Intravenous – maintenance of medicated IV fluids				X

VII. Skill – Miscellaneous

VII. Skill – Miscellaneous	EMR	EMT	AEMT	Paramedic
Assisted delivery (childbirth)	X	X	X	X
Assisted complicated delivery (childbirth)		X	X	X
Blood chemistry analysis				X
Blood pressure automated		X	X	X
Blood pressure – manual	X	X	X	X
Blood glucose monitoring		X	X	X
Eye irrigation	X	X	X	X
Eye irrigation –hands free irrigation using sterile eye irrigation device				X
Patient transport		X	X	X
Venous blood sampling			X	X

VII. Definitions

Academic—Based on formal education; scholarly; conventional.

Academic institution—A body or establishment instituted for an educational purpose and providing college credits or awarding degrees.

Accreditation—The granting of approval by an official review board after specific requirements have been met. The review board is non-governmental and the review is collegial and based on self-assessment, peer assessment, and judgment. The purpose of accreditation is student protection and public accountability.

Advanced level care—Care that has greater potential benefit to the patient, but also greater potential risk to the patient if improperly or inappropriately performed, is more difficult to attain and maintain competency in, and requires significant background knowledge in basic and applied sciences. These include invasive and pharmacological interventions.

Administered medication—The act of giving a medication to a patient that has been stocked and carried by EMS personnel. The patient may not have previously been determined by a physician to be an appropriate recipient of the medication.

Certification—An external verification of the competencies that an individual has achieved that typically involves an examination process.

Continuing education—The continual process of life-long learning.

Competence—The application of knowledge and the interpersonal, decision-making and psychomotor skills expected for the practice role, within the context of public health, safety and welfare.

Core content—The central elements of a professional field of study. The core content does not specify the course of study.

Credentialing—A clinical determination that is the responsibility of a physician medical director that authorizes a practitioner to perform a skill or role.

Curriculum—A particular course of study, often in a special field. For EMS education, it has traditionally included detailed lesson plans. (The responsibility for EMS curriculum has shifted to EMS educators and EMS programs based on the *Education Standards*.)

Educational affiliation—An association with a learning institution (academic), the extent to which can vary greatly from recognition to integration.

Entry-level competence—The level of competence expected of an individual who is about to begin a career. Entry-level competence is sometimes defined as the minimum competence necessary to practice safely and effectively.

EMS system—Any specific arrangement of emergency medical personnel, equipment, and supplies designed to function in a coordinated fashion. May be local, regional, State, or national.

Licensure—The legal authority granted to an individual by the State to perform certain restricted activities. A license is generally considered a privilege and not a right.

National EMS Core Content—The document that defines the domain of out-of-hospital care.

National EMS Education Program Accreditation—The national accreditation process for institutions that sponsor EMS educational programs identified by the *Education Agenda*.

Nationally recognized accrediting agency—An accrediting agency that the U.S. Secretary of Education recognizes under Title 34 CFR Part 602—The Secretary's Recognition of Accrediting Agencies.[17]

National EMS Education Standards—The document that defines the terminal learning objectives for each nationally defined EMS licensure level.

National EMS Scope of Practice Model—The document that defines scope of practice for each nationally defined EMS licensure level.

Outcome—The short-, intermediate-, or long-term consequence or visible result of treatment, particularly as it pertains to a patient's return to societal function.

Practice analysis—A study conducted to determine the frequency and criticality of the tasks performed in practice.

Registration—A listing of individuals who have met the requirements of the registration service.

Registration agency—Agency traditionally responsible for the delivery of a product used to evaluate a chosen area. States may voluntarily adopt this product as part of their licensing process. The registration agency is also responsible for gathering and housing data to support the validity and reliability of their product.

Regulation—Either a rule or a statute that prescribes the management, governance, or operating parameters for a given group; tends to be a function of administrative agencies to which a legislative body has delegated authority to promulgate rules/regulations to "regulate a given industry or profession." Most regulations are intended to protect the public health, safety, and welfare.

Scope of practice—Defined parameters of various duties or services that may be provided by an individual with specific credentials. Whether regulated by rule, statute, or court decision, it represents the limits of services an individual may legally perform.

Testing agency—Agency traditionally responsible for delivering a contracted examination. The responsibility of interpreting the results and defending the validity of those judgments is placed on the contractor.

Vocational/Technical—Refers to schools or programs specializing in the skilled trades, applied sciences, technology, and career preparation.

Appendix I. History of Occupational Regulation in EMS

The development of modern civilian EMS stems largely from lessons learned in providing medical care to soldiers injured in military conflict.

Building on these lessons, many rescue squads and ambulance services emerged in the civilian sector, often community-based in nature. Hospitals and funeral homes were also common sources of nascent response and transportation systems. While well intentioned, most of these personnel were untrained, poorly equipped, unorganized, and unsophisticated. The systems were unregulated, and no State or national standards existed. By the 1960s, prehospital care in the United States had evolved into a patchwork of well-intentioned but uncoordinated efforts. This all changed in the mid-1960s.

In 1960, the President's Committee for Traffic Safety recognized the need to address "Health, Medical Care and Transportation of the Injured" to reduce the Nation's highway fatalities and injuries.

In 1966, the National Academy of Sciences published a "white paper" report titled *Accidental Death and Disability: The Neglected Disease of Modern Society*[18] that called for improved training of ambulance personnel. This report quantified the magnitude of traffic-related death and disability while vividly describing the deficiencies in prehospital care in the United States. The white paper made many recommendations regarding ambulance systems, including a call for ambulance standards, State-level policies and regulations, and adopting methodology for providing consistent ambulance services at the local level (National Academy of Sciences National Research Council, 1966).

The Highway Safety Act of 1966 required each State to have a highway safety program that complied with uniform Federal standards, including "emergency services." This provided the impetus for NHTSA's early leadership role in EMS system improvements. Initial NHTSA EMS efforts were focused on improving the education of prehospital personnel such as the writing of the National Standard Curricula (NSC). Funding was also provided to assist States with the development of State EMS Offices. Subsequent NHTSA efforts were oriented toward comprehensive EMS system development and included, for instance, model State EMS legislation (Weingroff and Seabron, circa 2003).

The genesis of State EMS systems can also be traced to the early 1970s, when an unprecedented level of funding from the Federal Government and the Robert Wood Johnson Foundation prompted the establishment of regional EMS systems and demonstration projects throughout the country. The Emergency Medical Services Systems Act of 1973[19] (enacted by Congress as Title XII of the Public Health Service Act), yielded 8 years and over $300 million of investment in EMS systems planning and implementation. The availability of EMS personnel and their training were two components that eligible entities were required to focus on, resulting in the first generation of legislation and regulation of EMS personnel levels (NHTSA, 1996).

Beginning in 1971, NHTSA published the first 81-hour curriculum for training EMT-Ambulance personnel. Other NSC followed for EMT-Paramedics and EMT-Intermediates. These propelled EMS systems forward in terms of standardizing the preparation of people filling roles in providing prehospital emergency care. The NSC gave detailed "how to teach this course" guidance down to the minute in how much time to spend on specific learning objectives. It was initially helpful to instructors who had never taught anyone to care for patients in the prehospital environment. The NSC became functionally synonymous with the *scope of practice* that EMS personnel could perform. EMS textbooks were published to align with the NSC. Many States referenced the NSC in their statutes and rules.

The practical effect of the NSC for EMS personnel was that an EMS person could generally do what they were taught to do. The practice and educational preparation of most other allied health professions begins with agreement on what a person in the job can do (i.e., a scope of practice) and then developing the education resources to prepare a qualified person to do that role. For EMS, education was driving practice; for all other professions, practice drives education.

As EMS systems began to mature, limitations of the NSC became increasingly evident. A few examples of these limitations included:

- **Integration of new technologies and evidence**. When Automated External Defibrillators (AEDs) became available and proved to be both reliable and effective for cardiac arrest resuscitation, there had to be an update to the NSC before use of AEDs could be widely taught to EMS personnel. The opposite was also true as EMS devices or practices began to be shown as harmful. The only way to remove content from teaching and practice was to revise the NSC.
- **The professionalism of EMS educators**. EMS courses began to be taught in many areas by experienced adult educators. These educators questioned the constraints of the NSC when they found they needed more or less time than what was called for. The NSC provided no flexibility for how to deliver EMS courses.
- **State EMS Office role conflict**. States have the responsibility of setting scopes of practice for all levels of health care personnel and those who adopted the NSC functionally handed off this responsibility to a national document. There was no effective way structurally for States to reference the NSC and make local adaptations to both teaching and practice.

As a practical matter, the NSC also proved difficult and expensive to update. Controversy on periodic revisions stemmed from debate about EMS practice rather than updates to the education program.

The development of the *EMS Agenda for the Future* and the follow-on *EMS Education Agenda for the Future: A Systems Approach* called for a new model of EMS education. Central to the new model was a National EMS Scope of Practice Model (SoPM) setting a floor on expectations for what every person would be prepared to do in their role. Once the SoPM was established, National EMS Education Standards were developed to guide instructors in the depth and breadth of content to be taught. The development of curricula on how best to teach the courses at each level is now

left to individual instructors. EMS publishers provide an array of texts and other educational support material.

One function of State EMS offices was to ensure the competence of the State's EMS personnel. States employed many strategies to help assure safe and effective EMS practice, including licensure and certification. Unfortunately, these terms developed multiple connotations in EMS. In some cases, the meanings differed from other disciplines, causing confusion and inconsistency at the national level.

In 1981, the Omnibus Budget Reconciliation Act (OBRA) eliminated the categorical Federal funding to States established by the 1973 EMS Systems Act in favor of block grants to States for preventive health and health services. This change shifted responsibility for EMS from the federal to the state level.[20] By 1990, EMS in the United States had enjoyed many successes. Not only did EMS systems grow, but EMS became a career and volunteer activity for hundreds of thousands of talented, committed, and dedicated individuals. Emergency medical care was available to virtually every citizen in the country by simply dialing 9-1-1 from any telephone. Despite this progress, EMS was affected by many factors in the broader health care system.

In 1992, the National Association of EMS Physicians (NAEMSP) and the National Association of State EMS Directors (NASEMSD) saw a need for a long-term strategic direction for EMS, and the *EMS Agenda for the Future* was initiated with support from the National Highway Traffic Safety Administration and the Maternal and Child Health Bureau (MCHB) of the Heath Resources and Services Administration (HRSA). Published in 1996, the *EMS Agenda for the Future* proposed a bold vision for greater integration of EMS into the U.S. health care system.

In 1993, the National Registry of EMTs (NREMT) released the *National Emergency Medical Services Education and Practice Blueprint*. The *Blueprint* defined an EMS educational and training system that would provide both the flexibility and structure needed to guide the development of national standard training curricula and guide the issuance of licensure and certification by the individual States.

In 1998, the Pew Health Professions Commission Taskforce on Health Care Workforce Regulation published *Strengthening Consumer Protection: Priorities for Health Care Workforce Regulation* (Finocchio, Dower et al., 1998).[21] The report recommended that a national policy advisory board develop standards, including model legislative language, for uniform scopes of practice authority for the health professions. The report emphasized the need for States to enact and implement scopes of practice that are nationally uniform and based on the standards and models developed by the national policy advisory body.

Also in 1998, demonstrating their commitment to the *EMS Agenda*, NHTSA and HRSA jointly supported a 2-year project to develop an integrated system of EMS regulation, education, certification, licensure, and educational program accreditation. The result was the *EMS Education Agenda for the Future: A Systems Approach*, which recognized the need for a systematic approach to meet the needs of the current EMS system while moving toward the vision proposed in the 1996

EMS Agenda for the Future. The *EMS Education Agenda* called for a more traditional approach to licensing EMS personnel.

A coordinated national EMS system continues to be in the best interest of States, EMS personnel, and the public. State EMS offices, while working in cooperation with their stakeholders, should implement scope of practice regulations that are as close as possible to those described in the *National EMS Scope of Practice Model*. This will help with professional recognition of EMS personnel, facilitate reciprocity, decrease confusion, and enable the development of high-quality support systems to benefit the entire system.

Appendix II. Changes and Considerations from the 2007 Practice Model

The 2019 version of the Practice Model represents one frame of a motion picture of evolving EMS practice. Research and technology are constantly evolving and will continue to drive changes to EMS education and practice. Having the context for what did or did not change from the 2007 Practice Model may be useful in understanding some of the content in this document. The entire revision team deeply appreciates the thoughtful input received from the EMS community during multiple public reviews. While not every comment or suggestion was ultimately incorporated in the revision, all of them were considered and collectively played an important role in shaping the 2019 National EMS Scope of Practice Model.

Much of the effort in updating the 2019 Practice Model was focused on describing the interdependence between education, certification, licensure and credentialing and the narrative descriptions of each level, while attempting to more clearly document expectations in a way to minimize scope creep between the levels. While it is tempting to look at the specific list of skills included in the Interpretive Guidelines section, that list cannot be used to provide a complete understanding of the 2019 Practice Model for any level. The Interpretive Guidelines included in this document are intended to illustrate the kinds of skills and interventions personnel at various levels are educated, certified, licensed and otherwise qualified to do. This does not mean that every person at a particular level will routinely do every skill on the Interpretive Guideline list. One example of this is the obtaining and transmitting 12 lead electrocardiograms (ECG) at the EMT level. The Expert Panel recognized the strong research evidence to support the value of this skill for improving patient outcomes, especially in rural settings, however some systems have readily available paramedics and EMT's might not be utilized to provide this technology in such systems. The Expert Panel also recognized that the cost of technology might be prohibitive for some EMT level agencies. Accordingly, this is one example of a skill on which EMTs (and other levels of EMS personnel) will routinely be educated and tested but that preparation does not imply that the technology must or even should be available in every practice setting where EMTs function. In other words, such a task should be valued/permitted but not required if the necessary equipment/resources to complete the task are not available to personnel.

Finally, States maintain the regulatory flexibility to permit licensees to exceed the Practice Model but they do so along with the need to develop learning objectives, educational content, competency measures, and a credentialing process to ensure safe practice. As an example, some States allow licensed EMTs to draw up a unit dose of epinephrine for IM injection to treat anaphylaxis from a single or multi-dose vial although this activity is dependent on strict oversight by a physician medical director and is not permitted in all jurisdictions.

Nomenclature

The *Expert Panel* considered a recommendation[22] from the National EMS Advisory Council (NEMSAC) to recognize and use the term "paramedicine" to describe the professional discipline that is currently recognized as EMS. Because the national discussion on this important topic has

just begun, the group ultimately did not support a change to nomenclature for the 2019 Practice Model revision. When greater consensus among national EMS organizations and other EMS stakeholders is achieved, the recommendation could be considered during the next revision cycle.

Academic Degree Requirements for Paramedics

Consideration was given by the Expert Panel to calling for an associate degree as an entry-level education requirement for paramedics. Arguments in favor of this change include recognition of the complexity and sometimes ambiguity inherent to paramedic practice, increasing the professional recognition of paramedics, a logical pathway towards better compensation, and comparability with other health care professions. Arguments against this change include the challenges of integrating associate degree academic preparation into fire, hospital or other non-academic institution based programs. Concerns were voiced that increasing academic preparation requirements could increase the cost of education, shrink the hiring pool of paramedics for employers and threaten existing paramedic level service delivery programs. The Expert Panel considers this topic as a subject worthy of further national debate and exploration. While the group clearly recognizes education as the foundation of any profession's scope of practice, the difficulty of considering transitional variables such as grandfathering existing personnel and programs, workforce recruitment and retention, etc., were beyond the scope of this project.

Attendant Qualifications for Ambulance Transport

The Expert Panel was asked to evaluate the practice of EMRs serving as part of an ambulance crew, and more specifically as the primary care giver during ambulance transport; meaning an EMR attending to the patient in the back of an ambulance en route to a medical facility without a higher level of licensed EMS practitioner physically present in the same compartment as the patient.

While defining ambulance crew composition is outside the scope of this document, the Expert Panel did consider the lack of scientific evidence to support the utilization of EMRs to fulfill clinical staffing requirements during the transport phase of EMS care when it developed the description for an EMR in Section IV of this document. Considering the education, certification, licensing, and credentialing processes pertaining to EMS practice, the Expert Panel reaffirms that while an EMR may be used to assist patient care in an ambulance, an EMT (or higher level personnel) must be physically present in the patient compartment and assume responsibility for the delivery of care during transport.

Patients transported by ambulance require ongoing assessment and treatment that is intended to ensure their continued safety and positive clinical outcomes. Patient condition during transport can decompensate quickly, requiring a greater depth and breadth of knowledge that enables EMS personnel to anticipate and interpret subtle physiologic changes and provide interventions that are not taught at the EMR level.

States are encouraged to help communities identify resources to ensure licensed practitioners at the EMT or higher levels are available to care for patients that require transport by an ambulance.

Portable Technologies

Exponential improvements and availability of portable technologies, such as left ventricular assist devices (LVAD), patient controlled analgesia pumps, transport ventilators, etc., creates complex challenges for education and credentialing that did not exist a decade ago. Such patient care needs may be encountered by all levels of personnel in community and 9-1-1 settings and with patients originating in health care facilities during transfers. Even when the patient's condition would not require EMS interaction with a device or intervention during transport, the variability of circumstances under which EMS delivery systems will likely encounter these patients steered the Expert Panel away from a call for specific levels of EMS personnel to be qualified in managing complex technologies, including non-invasive diagnostic equipment (e.g., ultrasound). The actions of EMS personnel regarding portable equipment and technologies have intentionally been left to local medical director credentialing.

Deletions/Updates

Evolution and fine-tuning of the Interpretive Guidelines to eliminate redundancy resulted in changes that may be perceived as certain skills being eliminated from the Practice Model. The only "true" deletions include Military AntiShock Trousers (MAST)/Pneumatic AntiShock Garment (PASG), spinal "immobilization" (this terminology has been revised), demand valves, carotid massage, automated transport ventilators at the EMT level (deferred to a decision by the medical director), and modified jaw thrust for trauma. Newer evidence suggests that these references are antiquated and/or no longer recommended. Spinal immobilization was amended to reflect current thinking on spinal motion restriction and additional skills were incorporated at all levels. The topic of "assisting" patients with their own prescribed medications was also revisited. The mechanical task of opening bottles or providing a drink of water aside, aid associated with placing a tablet in the patient's mouth, activating an inhaler, or delivering a dose of medication via autoinjector is clearly an act of medication administration. Administration of medication requires a thorough understanding of the drug, including how it moves through the body, when it needs to be administered, possible side effects and dangerous reactions, proper storage, handling, and disposal, and an entire process for confirming patient identification (for the prescription), route, dose, timing, expiration dates, and that the container contains the medication the label says is intended. Medication errors happen all too often in the United States, even when drugs are given by professionals. In fact, medication errors are the cause of 1.3 million injuries each year. These errors are due to the wrong drug, dose, timing, or route of administration. Preparing, giving and evaluating the effectiveness of prescription and non-prescription medication is not in the scope of practice for EMS personnel, with the exceptions described in the Interpretive Guidelines and those authorized by the State and physician medical director. References to "assist patients in taking their own prescribed medications" have been identified as confusing by educators and practitioners and the *Expert Panel* has advised they be removed from the *Practice Model*.

Other elements that were removed from the 2007 Interpretive Guidelines were intended to minimize redundancy and not intended to reflect removal from the Practice Model. Examples include cricoid pressure (considered to be a component of airway management) and therapeutic PEEP (considered to be a component of ventilator management at the paramedic level).

Additions to the Interpretive Guidelines

The Expert Panel considered several proposed additions to the Interpretive Guidelines and an NREMT Practice Analysis was utilized to evaluate the frequency and level of skills. Sensitive to the impact of increased didactic and psychomotor instruction that effectively translates to added course time and potential monetary expense to programs and student candidates, the Expert Panel considered changes in practice by addressing the following questions:

1. Is there evidence that the procedure or skill is beneficial to public health?
2. What is the clinical evidence that the new skill or technique as used by EMS personnel will promote access to quality health care or improve patient outcomes?
3. What is the appropriate level of education, certification, licensure and credentialing needed to safely perform the task/skill?

Several of the suggestions received by the Expert Panel were felt to be above the level of entry-level personnel and were not included. In particular, interventions that are regularly performed by the lay public, such as self-administered medications, blood glucose monitoring, and pulse oximetry were considered at length. It is noted that patients receive health education and training from their primary care provider to perform activities that are tailored to their personal medical histories and response to prescribed interventions over time. The Expert Panel maintains that licensed individuals at all levels are highly accountable for the medical care they provide as well as the maintenance and calibration of medical equipment used during a patient encounter. Health professionals are not only educated to provide an intervention, they receive education in the associated risks and potential complications, related pharmacology (when medications are involved), and they are able to analyze the effectiveness of treatment. Perhaps the most critical difference between the lay public and EMS personnel assuming responsibility for a particular task/skill: licensed individuals are taught to assimilate information and apply critical thinking skills to know when to and when not to apply an intervention in a particular scenario. In the example of blood glucose monitoring, it is also important to note that the use of such devices by EMS personnel invokes the Federal-level Clinical Laboratory Improvement Amendments[23] (CLIA) to the Public Health Services Act. In regard to pulse oximeters (that can be purchased inexpensively at discount stores), there is no evidence to support an assertion that a pulse oximeter in the hands of an EMR (or other level of EMS practitioner) is more effective than hands on patient assessment in determining the need for supplemental oxygen although false readings from a variety of causes have resulted in undetected patient compromise and a false sense of security by users. Such equipment are adjuncts that should be used judiciously in conjunction with sound clinical judgment. Of the remaining tasks/skills, the Expert Panel deliberated which level was most appropriate to implement the task/skill.

The *Expert Panel* concluded that spinal motion restriction using cervical collars and basic splinting for suspected extremity fractures were appropriate additions to the Practice Model at the EMR level.

At the EMT level, the Expert Panel agreed on the administration of beta agonists and anticholinergics, oral over-the-counter (OTC) analgesics for pain or fever, blood glucose monitoring, continuous positive airway pressure devices (CPAP), and pulse oximetry. The Expert

Panel also agrees that there will be instances of lower level personnel aiding higher levels, assisting with skills of the high-level personnel when: the higher level personnel does the key portion of the procedure, the assistance is authorized by the medical director, the assistance is in the direct presence and supervision of the higher-level personnel, and the assistance is permitted by the State.

The use of supraglottic airways (SGA) and waveform capnography at the EMT level was extensively debated. Several public commenters expressed a lack of support on draft language that proposed to add them to the interpretive guidelines for EMTs during the national engagement period. The Expert Panel was evenly divided on the topic. Several "pros" and "cons" for adding SGA and waveform capnography for EMTs at the national level were considered. It was noted that several jurisdictions are already using SGA as a more definitive airway than the BVM although some panelists added that the BVM is not taught well or used effectively in many cases. Major "cons" point to a critical patient safety concern if an SGA is not placed properly or is not verified using waveform capnography. Many felt the education for SGA and waveform capnography would add significant time and increase expense to the EMT program, a consideration that was worrisome and expressed by the public and members of the Expert Panel. Others suggested that BVM ventilation may not be done well, but a misplaced advanced airway could lead to no ventilation and patient detriment or demise. Finally, a limited review of the literature highlights the fact there is a general lack of evidence that SGA improves outcomes in cardiac arrest or other etiologies over BVM ventilation. The Expert Panel concluded that while SGA and waveform capnography could successfully be taught and measured at the EMT level, it is an intervention that should be reserved for an experienced practitioner and therefore, is not a prudent addition as an entry-level skill to the Practice Model for an EMT now. Some States currently allow licensed EMTs to use SGA and/or waveform capnography although this activity is dependent on strict oversight by a physician medical director and is not permitted in all jurisdictions.

Additions to the AEMT level include monitoring and interpretation of waveform capnography, additional intravenous medications (such as epinephrine during cardiac arrest and ondansetron), and parenteral analgesia for pain.

The Paramedic scope of practice was considered most in alignment with current practice, however, the Expert Panel recommended the addition of high flow nasal cannula, and expanded use of OTC medications.

None of these changes should be considered "in effect" until officially adopted by the State licensing authority and medical director.

Appendix III. Legal Differences Between Certification and Licensure

Used with permission: National Registry of Emergency Medical Technicians

www.nremt.org/rwd/public/document/certification_licensure

Although the general public continues to use the terms interchangeably, there are important functional distinctions between certification and licensure.

Certification

The Federal Government has defined "certification" as the process by which **a non-governmental organization grants recognition to an individual who has met predetermined qualifications specified by that organization**.[24] Similarly, the National Commission for Certifying Agencies defines certification as "a process, often voluntary, by which individuals who have demonstrated the level of knowledge and skill required in the profession, occupation, role, or skill are identified to the public and other stakeholders."[25]

Accordingly, there are three hallmarks of certification (as functionally defined). Certification is:

1. A voluntary process;
2. Done by a private organization; and
3. A way to provide the public information on those individuals who have successfully completed the certification process (usually entailing successful completion of educational and testing requirements) and demonstrated their ability to perform their profession competently.

Nearly every profession certifies its members in some way, but a prime example is medicine. Private certifying boards certify physician specialists. Although certification may assist a physician in obtaining hospital privileges, or participating as a preferred provider within a health insurer's network, it does not affect his legal authority to practice medicine. For instance, a surgeon can practice medicine in any State in which he is licensed regardless of whether or not he is certified by the American Board of Surgery.

Licensure

Licensure, on the other hand, is the State's grant of legal authority, pursuant to the State's police powers, to practice a profession within a designated scope of practice. Under the licensure system, States define, by statute, the tasks and function or scope of practice of a profession and provide that these tasks may be legally performed only by those who are licensed. As such, licensure prohibits anyone from practicing the profession who is not licensed, regardless of whether or not the individual has been certified by a private organization.

What if my State certifies, not licenses, EMS professionals?

Confusion between the terms "certification" and "licensure" arises because many States call their licensure processes "certification," particularly when they incorporate the standards and

requirements of private certifying bodies in their licensing statutes and require that an individual be certified in order to have State authorization to practice. The use of certification by the NREMT by some States as a basis for granting individuals the right to practice as EMTs and calling the authorization granted "certification" is an example of this practice. Nevertheless, certification by the National Registry, by itself, does not give an individual the right to practice.

Regardless of what descriptive title is used by a State agency, if an occupation has a statutory- or regulatory-defined scope of practice and only individuals authorized by the State can perform those functions and activities, the authorized individuals are licensed. It does not matter if the authorization is called something other than a license; the authorization has the legal effect of a license.

In sum, NREMT is a private certifying organization. The various State EMS Offices or like agencies serve as the State licensing agencies. Certification by NREMT is a distinct process from licensure; it serves the important independent purpose of identifying for the public, State licensure agencies and employers, those individuals who have successfully completed the Registry's educational requirements and demonstrated their skills and abilities in the mandated examinations. Furthermore, NREMT's tracking of adverse licensure actions and criminal convictions provides an important source of information, which protects the public and aids in the mobility of EMS providers.

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